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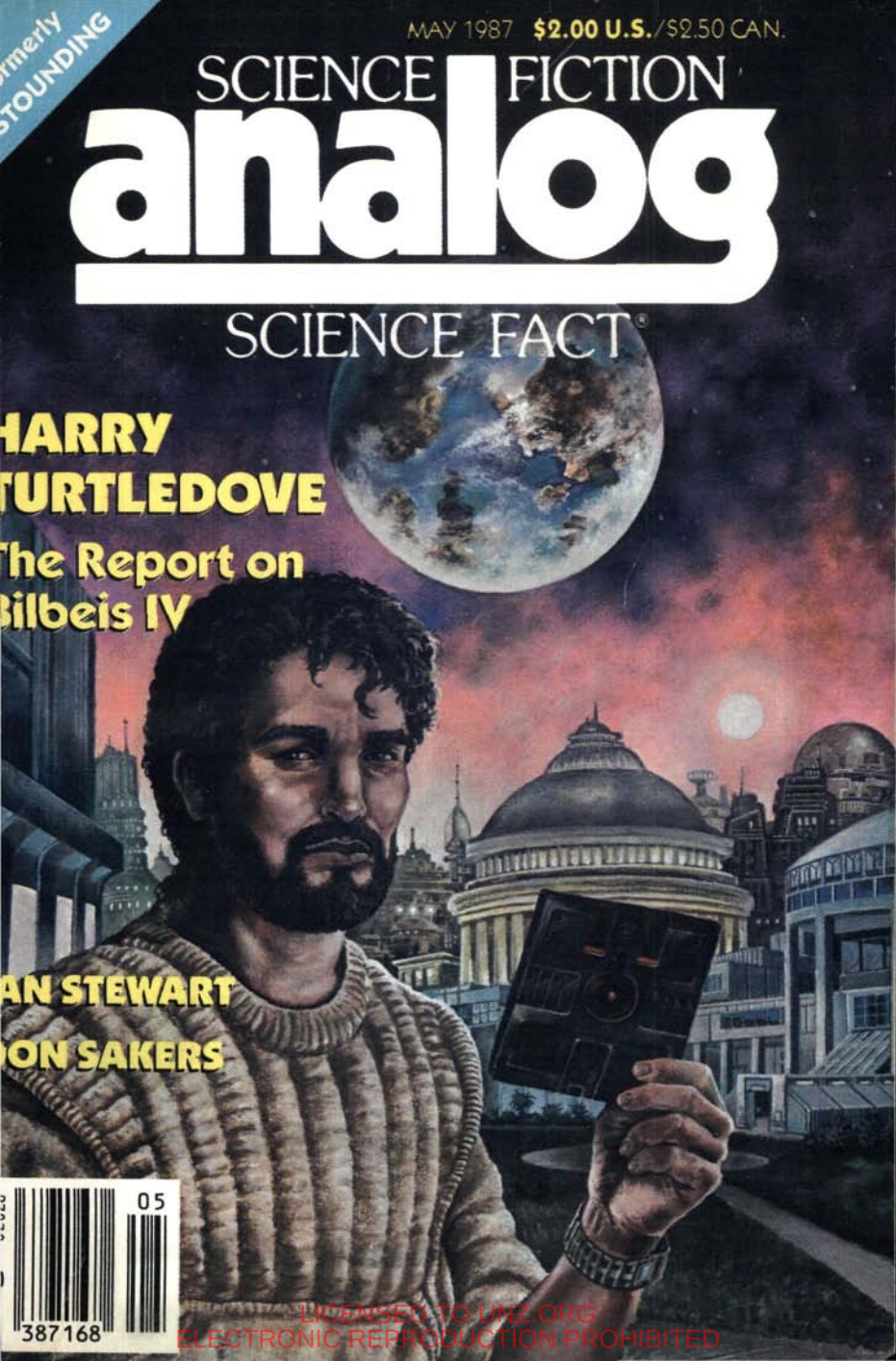

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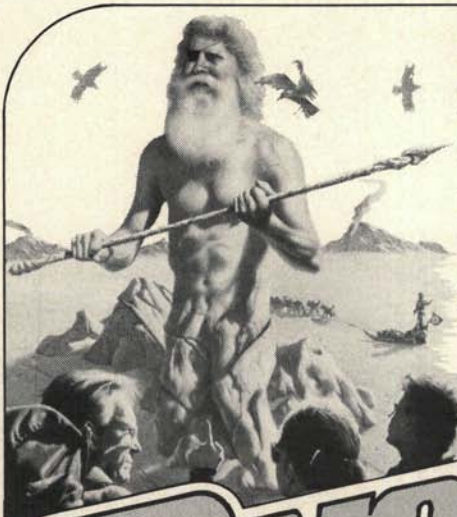

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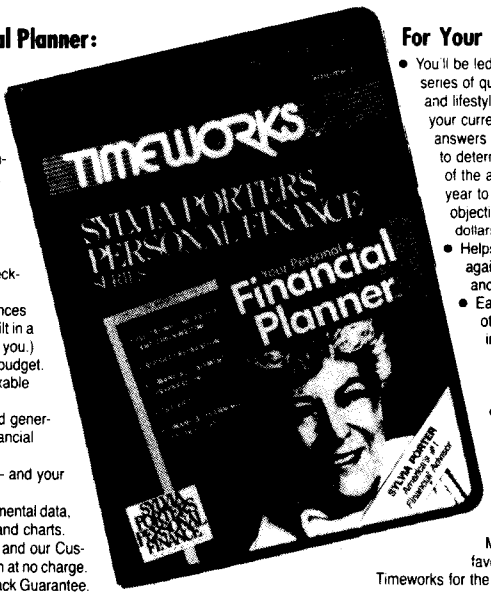

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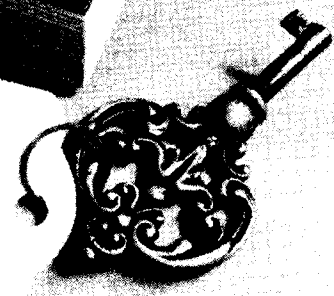

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Editorial

BUTTERFLY FUTURES

Stanley Schmidt

Last summer, shortly after returning from the Pacific Northwest Writers Conference, I received a delightful letter from the husband of one of the conference's organizers. I hadn't had a chance to meet him while I was there, but in his letter he pointed out that he had already influenced my life, because the chain of events leading to my invitation to the conference had begun with his reading *Analog* editorials and discussing them with his wife. He compared this chain of causality, with a small event having unplanned effects that might seem quite remote and unrelated, to a story he remembered in which a time traveler accidentally killed a butterfly and returned to a world quite different from the one he had left. "The beat of butterfly wings," Mr. McKay observed, "may have long-term effects on our lives—rarely recognized at the time of their occurrence, and only occasionally recognized even long after the fact."

You may have already recognized the story as Ray Bradbury's "A Sound of Thunder," and I suspect you also recognize that Mr. McKay's observation is right on the mark. I (probably like you) can think of many examples from my own experience, some of them involving almost ridiculously long and tortuous chains of cause and effect. It's quite likely, for instance, that I would never have met my wife if my aunt had not taken me to the Miami Serpentarium more than twenty years earlier. I realize it sounds far-fetched, and I think I'll leave the connecting links as an exercise for your imagination; but I assure you they're there and not hard to recognize. I might not be editing *Analog* if my father hadn't practically insisted that I try a few *Astounding* stories when I was nine, or if I hadn't been sitting in a certain room in graduate school be-

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moaning the state of the job market for physicists on a certain afternoon, or if I hadn't been drafted onto the artist-lecture programming committee of the college where I taught after graduate school. In each case, there are many other links I could have singled out, each one an event which seemed trivial yet actually played a key role in shaping the future direction of at least one person's life (usually in a way which seemed quite unrelated to its original purpose). Eliminate or change any one of them, and my wife or I might have married other people, or no one, and might now be doing completely different things in different places. Such changes might have caused other people to exist or not exist or be different from who they are. Those, in turn, could affect the existence, nonexistence, or identity of potentially infinite and repeatedly branching series of successors.

On the other hand, some events appear full of potential import, yet have no lasting consequences at all. An invitation to an interview for an important new job, for example, may have no long-range effects if the interviewee doesn't get the job and wasn't counting on it. Even if he gets the job, he can't know at the time whether his doing so will have any important long-range consequences for himself or anyone else. Some events may, at the time, look like crucial turning points, yet turn out to be utterly inconsequential. A *real* turning point, on the other hand, may seem so trivial that no one even suspects its importance until years later—and perhaps not even then, since it may well be that no one even remembers the incident, much less notices its causal links to its long-term effects.

Science fiction has long been fascinated with such causal chains, and the possible effects of changing links. "A Sound of Thunder" is only one of many stories in which a traveler to the past makes a change that turns out to have far-reaching repercussions in the present. Quite a few stories have explored the paradoxes that might result from such changes, such as the man who goes back and murders his grandfather, thereby making his own existence impossible. Some have speculated that paradoxes were not possible and provided various mechanisms to avoid them, from "His ancestry wasn't what he thought it was and his time-traveling self was there all along" to various postulated quirks in the structure of time. Because of the paradox problem and other philosophical difficulties, most scientists have tended to be highly skeptical concerning the possibility of travel into the past. Even some of those skeptics have written time travel stories, though, because the concept has such intriguing fictional potential—and science fiction writers can legitimately speculate about anything that has not been quite rigorously proved impossible. Some stories (such as Harry Turtledove's "sims" series) have avoided the paradox problem by not invoking time *travel* at all, but simply postulating an alternate history in which some key variable has been changed and then exploring the consequences.

This general type of speculation—and especially the "alternate history" sub-

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type—has undergone a recent resurgence of interest, largely because of recent scientific interest in the "many worlds" interpretation of quantum mechanics. That has generated enough recent articles and stories (such as Frederik Pohl's *The Coming of the Quantum Cats*) that I don't think you need me to explain it yet again. I'll merely remind you that the basic idea is that whenever a situation has two or more possible outcomes, instead of *the* universe choosing one outcome or the other, enough new universes come into being so that *every* possible outcome occurs in one of them. The concept is not particularly popular among physicists, and even those who regard it as a real possibility see no mechanism for people or anything else traveling from one history-branch to another, as happens in so many recent stories. But again, that does not invalidate such stories, for the limits on science fiction writers are not quite the same as those on scientists. The fact that nobody now knows any way we could travel between branches does not constitute rigorous proof that no way can ever exist.

So writers go right on playing with

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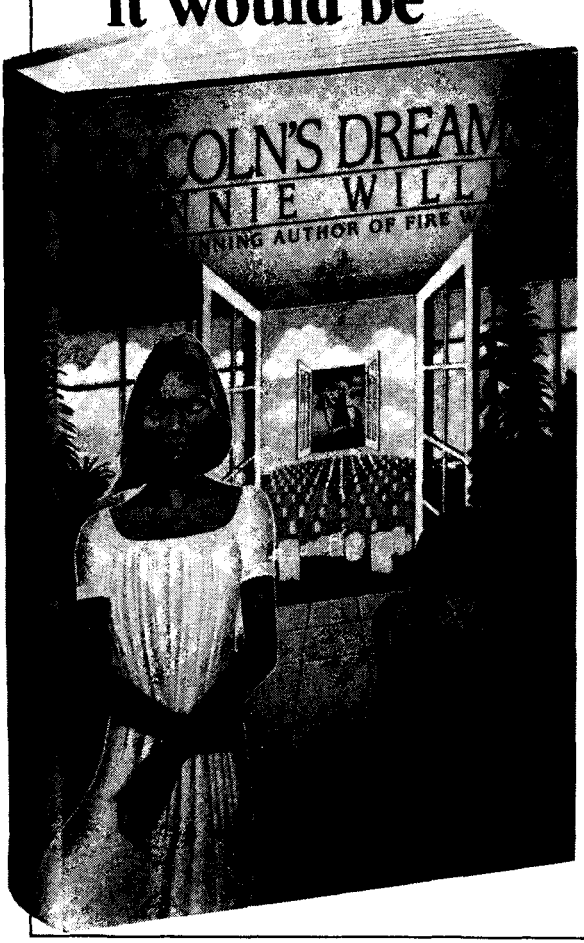

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such possibilities, as well they should. It seems to me, in fact, that few are going as far with them as they could and should. Not only does the many-worlds interpretation give a modicum of new respectability to "parallel universe" stories (or "perpendicular universe," as in John Gribbin's story of almost that name), but it may do the same for good old-fashioned time travel. Remember, a major objection to travel into the past has always been that it could lead so easily to paradoxes—but the paradoxes only arise because time is considered a single dimension in which things must be *one way* at any point, and changing conditions at one point may change them elsewhere. The many-worlds picture currently under serious discussion by physicists may eliminate this consideration altogether. A time traveler in this scheme does not produce changes in a one-dimensional history that "should" be fixed—his arrival and subsequent actions merely create a new branch, a different history determined in part by his deeds, with no effect on the branch he left. (The language is, of course, a many writers have already pointed out, inadequate to the occasion. Given that this picture has any validity at all, such terms as "create" convey but vague approximations of the real relationships. We should probably be picturing something more like a many-dimensional "tree," and a time traveler's journey as a "permanent" part of it forming a cross-connection between two branches. But I'm not going to try to build a whole new language here and now!)

I hope to see more writers exploring that sort of possibility (and its implications), as well as straightforward alternate history. But in either case, I have one final caution. It seems to me that very few stories have looked closely at what might actually happen as a result of a change (or an alternate branch) in history. Many have indicated in a general way that such effects might be expected, but few have worked them out in detail—and now it's time for more than generalities. When Bradbury published "A Sound of Thunder" in 1952, the idea that a tiny change in the past could make a large difference in the present was new enough that the story could make a strong impression merely by presenting the concept in a well-crafted and entertaining fashion. But would the nature of the changes really be very much as he described them?

I, for one, am skeptical. Here's a time traveler whose transgression consists of taking a few steps off the path designated as "safe," in the process accidentally crushing a butterfly. At the end of the trip he returns to the trip promoter's office and finds that the sign on the wall is oddly spelled and the wrong man has just won the presidential election.

But it's still the same office, and the language is still recognizably English, and the same candidates were still running for the same office!

Now, I haven't talked to the author about this, and for all I know he really can construct a chain of events in which the death of a prehistoric butterfly leads to essentially the same culture, but with slightly altered orthography and politics. If so, that might be an interesting exercise (and another good story) in itself. But that seems to me an extremely specialized and unlikely chain to forge.

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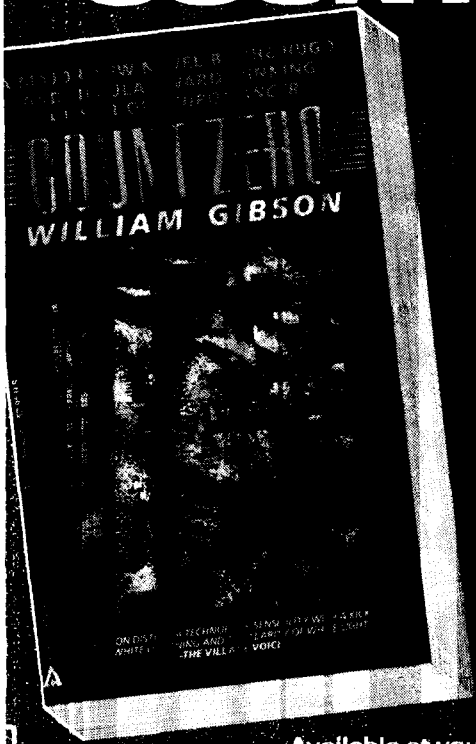

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It seems more likely that either the results of the butterfly's death were small and in such varied directions as to cancel out and leave no obvious effect on the present—or it was somehow *so* special that its death was *really* important and led to a quite unrecognizable future. To take an extreme (and admittedly unlikely) example, suppose this butterfly was a direct ancestor of the first individual of some species that evolved into something we now know and depend on—like chickens, or even ourselves. If somehow this butterfly (or a historical figure assassinated by a time traveler) was *really* pivotal, so that its death led to bigger and bigger dominos toppling in its wake, just how different might the present *really* become?

I suspect the answer to such a question can be pretty startling—perhaps more startling than any storyteller has yet imagined. There's little doubt that "A Sound of Thunder" was a landmark story, but now I'd like to see somebody go way beyond it. I'd like to see somebody start with one of those historical perturbations we've been so fond of, and derive a wildly surprising and utterly convincing future history. He or she won't do it by skipping the details and jumping to something like our world except for a few arbitrary cosmetic changes, but rather by logically tracing the subsequent history, step by tiny step, until it leads inevitably and inexorably to something no one could have foreseen *without* tracing its step-by-step development.

That's a tall order—but the results, if somebody does it to its full potential, should be well worth the effort. ■

● Some sciences are concerned with action, others with understanding; that is, some consist in constructing things, others in analysing compound things. For many people are practiced in action but have little scientific understanding; they have tested the healing powers of medicines and are good at healing because of their experience alone, but they do not know much about the natural causes . . . Many people on the other hand have understanding but not practical ability and these can impart knowledge to others but cannot put it into practice themselves.

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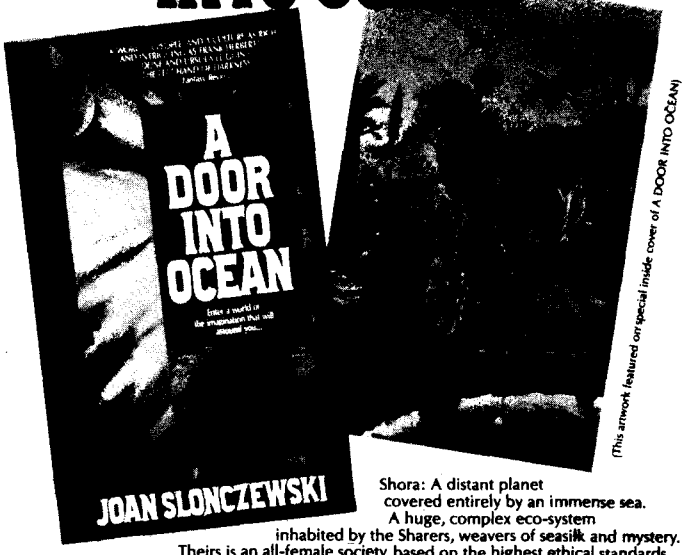

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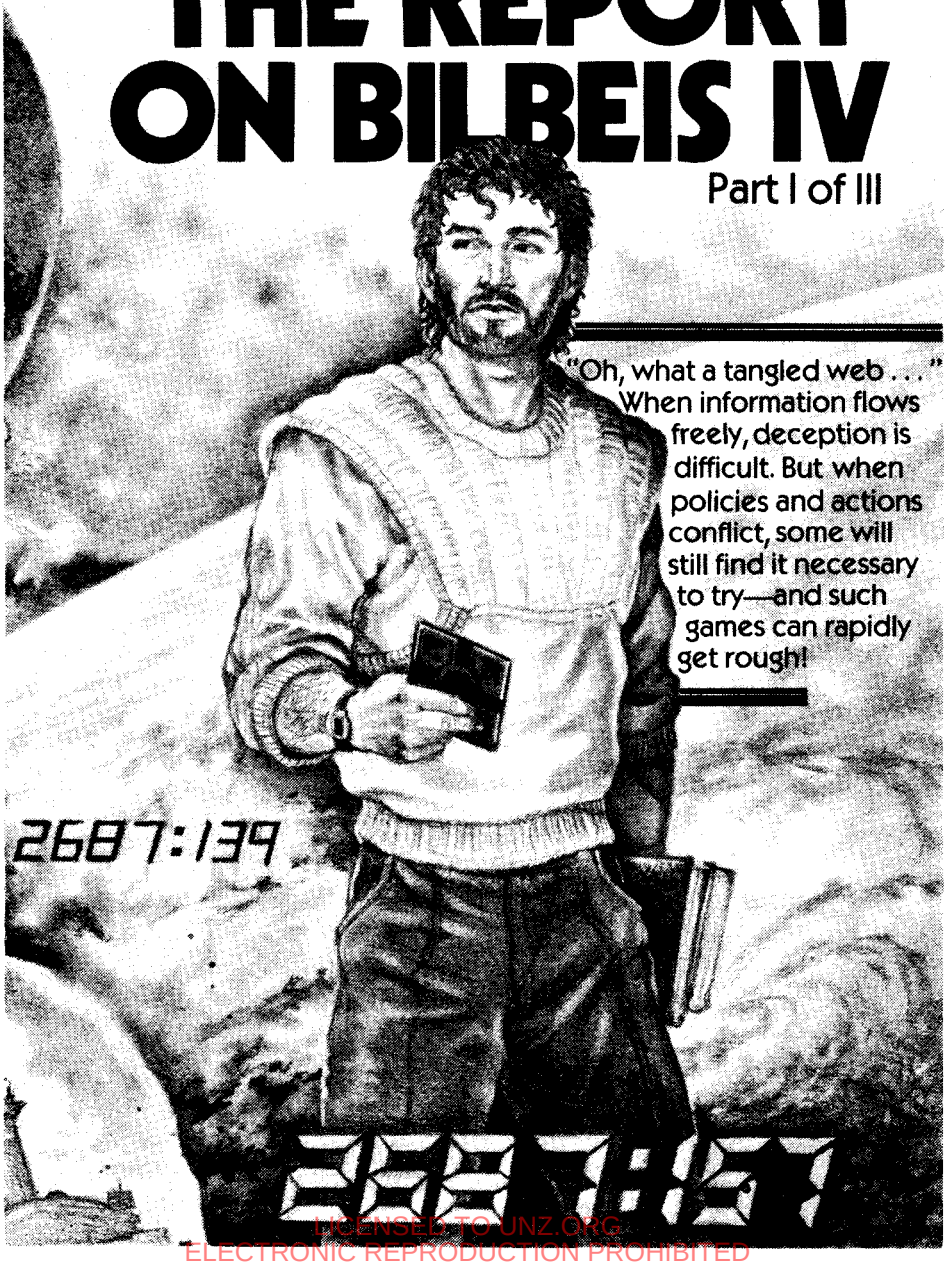

"Oh, what a tangled web . . ." When information flows freely, deception is difficult. But when policies and actions conflict, some will still find it necessary to try—and such games can rapidly get rough!

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"Thank you so much, Chairman Koch," Assemblyman Valleix said. He was a Purist; his voice dripped sarcasm.

"It is my duty and my pleasure, sir," replied the Chairman of the Federacy Survey Service. Her own voice was studiedly neutral. She was a plump, middle-aged woman who habitually wore gray—the better to blend into the background, her detractors said.

Valleix returned to the attack. "Isn't it a fact, Madam Chairman, that the natives of Rugi II learned of the moldboard plow through an indiscreet remark by one of your Survey Service operatives? That strikes me as a serious breach of the rule of noninterference."

Paulina Koch did not smile. One of her subordinates had leaked that report to another, less prominent, Purist's aide months ago. Now it was coming home to roost.

"No, I am afraid that is not a fact, Assemblyman," she said.

His eyebrows shot up. "I suppose you have evidence to support such a startling assertion." By his tone, he did not suppose that at all.

"Yes, Assemblyman, here it is." She produced a floppy. "This will show that the moldboard plow was in fact invented on an island off the main continent of Rugi II, and that it spread there through normal trade contacts at around the time of the last Survey Service examination of the planet. That accounts for its sudden appearance in areas where it had previously been unknown."

Valleix was a black man; had he been white, he would have blanched. He had tangled with Paulina Koch too often to suppose her data were anything but what she said they were. He was also painfully aware she had just made a fool of him throughout the Federacy.

He cut his losses, nodding to the head of the subcommittee. "I request a day's recess to evaluate these documents."

"Granted. Madam Chairman, you will be available tomorrow?"

"Certainly, madam." Paulina Koch still did not smile, or show any outward sign of triumph. She had been a bureaucrat too long for that. But having savaged one Assemblyman, she did not expect any problems from the others. The Survey Service's appropriation looked safe again.

Professor Fogelman breezed into the classroom fifteen minutes late. He had done that a lot in his undergraduate lecture course; Stavros Monemvasios was not surprised to find him acting the same way in this graduate seminar.

"Greetings, greetings, greetings." Fogelman peered round the room. The anthropology prof liked to show off. He started guessing students' home worlds by their looks and dress: "Iberia, Hyperion, Epirus, Saigon, Inshallah, Hyperion, Iowa—"

He came to Stavros, hesitated. "Alexander?"

Monemvasios grinned; Fogelman had made the same mistake in the undergrad course. "I'm from New Thessaly, sir." Unlike most men of his planet, he wore a beard.

"Damn!" The professor smacked his fist down on the lectern—he remembered too. He got three of the last four people in the seminar right.

The one he missed was a girl from Earth—the University of Hyperion's anthro department drew students from

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all over the Federacy. "Earth! *Anyone* could come from Earth." Fogelman snorted, dismissing his error.

"Now for your first assignment," he said, and the students responded with predictable groans. "Even after you start doing your own fieldwork, comparative studies will require you to use Survey Service reports intelligently." He started tossing out floppies like a man dealing cards, one for each person in the classroom. "Fifteen-minute summaries of these next week. They're all fresh new reports—I just pulled them from the data net before I came. That's why I was late."

Stavros raised an eyebrow. Now he was surprised; Fogelman had never bothered with excuses before. The floppy on the grad student's desk had no label. It could have been anything from a laundry list to the score for a symphony. He'd have to plug it into his computer to know for sure. No time for that now—he got sucked into arguments and frantic note-scrawling on just what the proper definition for civilization was.

The ringing bell took him by surprise. "See you all a week from now," Fogelman said. "I'm looking forward to the reports." A lot of profs would have been blowing smoke with that line, but he sounded as if he meant it. He grinned. "One of you has a real plum."

He was a good psychologist; Stavros was sure he wasn't the only student who hurried off the the dorm to see what world he'd drawn. When the report came up on the screen, Stavros's jaw dropped. He whistled softly. "He wasn't kidding," breathed the young man from New Thessaly. "Bilbeis IV—"

* * *

Pleased with herself, Paulina Koch attacked the printouts in her IN basket with a dash and energy alien to the dogged persistence that was her usual hallmark. She saw with relief that no red-flagged items were in there, and only a few with yellow warning tags. The Survey Service was orderly and efficient, as it should have been.

She disposed of the first two priority items in short order. One should never have had a flag; a deputy coordinator earned a black mark for not being able to make up his own mind.

The third paper with the yellow strip at the top made her frown. Why should she care in particular if the Survey Service ship *Jêng Ho* had come in to the Service base on Topanga from a routine survey of a world without space travel? Then she saw which world it was, and punched for the full report on Bilbeis IV.

A long time ago, the Survey Service had given itself a black eye there. An anthropologist with more altruism than sense had smashed the rule of noninterference, curing a progressive local queen of a malignancy that should have killed her in short order. He was cashiered, of course, but the Purists had been beating the Service over the head with his folly for fifteen hundred years. Koch couldn't imagine how many billions that one blunder had cost.

Fortunately, most interference canceled out in time, no matter how loud the Purists yapped. The odds were excellent that Bilbeis IV would be another case like that, and could return to the obscurity it deserved.

The abstract came up on the screen. Paulina Koch read it. Disciplined as

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always, she started on the report itself. The phone buzzed several times while she was working through it. She was a trained speedreader; the long document only took her about an hour and a half.

She thought she was in perfect command of herself until she tried to clear the report. She needed three stabs before she could hit the right button. At last the screen went blank and gray.

She also had to try several times before she got the extension she wanted. "External Affairs," a deep voice said.

"Hovannis, will you come up here for a moment?" At least her voice gave away nothing, she told herself with lonely pride. Not that that mattered—not that anything would matter once this report came out. Still, she preferred going on as long as she could to yielding to despair. She said, "An interesting situation has arisen, one you'll want to see."

"On my way," Hovannis said briskly. The phone went dead. Hovannis was a capable man, Paulina Koch thought, well suited to running the Survey Service's External Affairs Bureau—Security, an organization less sensitive to public relations would have called it.

Stavros Monemvasios felt caffeine buzzing through his veins like current through wires. Excitement also powered him, perhaps more powerfully. Under them he felt exhaustion rising, but he had no trouble shoving it down, though his clock told him he was closer to sunrise than midnight. He knew he would be a zombie in class tomorrow, but he did not care.

Fogelman couldn't have looked at the floppies before he dished them out. Stavros was certain of that. The report on Bilbeis IV was no plum; it was a bomb, waiting to go off and blow the Survey Service to smithereens.

Even as an undergrad, Stavros had learned about Bilbeis IV. It was the *don't* pounded into every would-be fieldworker, and carried two lessons with it. Breaking the rule of noninterference not only improperly influenced primitive worlds, it was also guaranteed—and deserved—professional death for anyone foolish enough to try it.

Improperly influenced . . . "Ho, ho, ho!" Stavros muttered. His lips skinned back from his teeth in a humorless grin. He would have backed that phrase in any understatement contest anywhere.

That anthropolgist had cured queen —what was her name? Sabium, that was it—queen Sabium's cancer, all right. He'd cured her so well that here she still was, very much alive, fifteen hundred years later. No wonder a whole continent and part of another worshiped her as the undying goddess.

And as if that wasn't bad enough—and it was plenty—she'd been a queen with advanced ideas, including some sort of incentive for inventions scheme. She'd carried that forward for fifteen hundred years too, so that Bilbeis IV, with a civilization hardly older than its queen, was already on the edge of a scientific revolution.

Stavros wished it weren't so late. He wanted to call Fogelman and scream in his ear. He reached for his phone. The anthropology prof had given his grad students his home code, and he wouldn't mind getting out of bed for news like this.

Then Stavros put the phone down.

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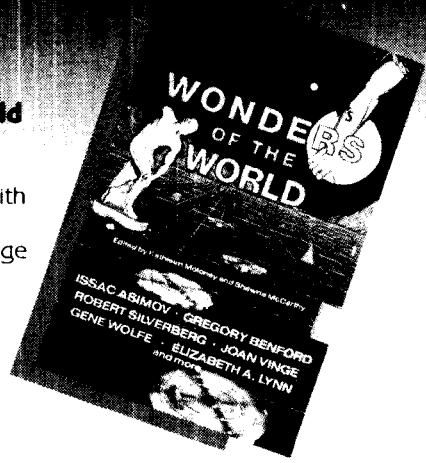

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Rousting Fogelman would be fun, but coming into class a week from now all cool and innocent and stunning everyone at once sounded even better to him. He plucked at his beard, trying to compose a couple of innocent-sounding opening sentences for his presentation. He chuckled. That wouldn't be easy.

He wondered just how many heads would roll at the Survey Service because of the Bilbeis IV report. He was no Purist, but he didn't relish the idea of having a whole planet's development yanked out of shape by external influences. And the only way the Service kept its budget so nice and fat was by insisting that kind of thing never happened, never could happen. Now that it had, a lot of people would need to cover their asses in a big hurry.

He caught himself yawning enormously. Caffeine or no, the presentation would have to wait till tomorrow.

Roupen Hovannis did not read as fast as his boss, but he did not have to wade through the whole report, either. Paulina Koch brought the relevant, damning sections up on the screen one at a time.

"Enough," Hovannis said, waving for her to stop. He was a big, dark, stocky man with a large hooked nose, heavy eyebrows, and a permanent five o'clock shadow even though the Survey Service Chairman knew he shaved twice a day. The thuggish exterior added to his effectiveness; it made people underestimate him.

"Reactions?" Paulina Koch asked after Hovannis sat silent for some time.

"We are in major trouble if and when this report gets out," the External Affairs Director said bluntly. Paulina Koch frowned. He knew she preferred bureaucratic circumlocutions to plain speech, but at the moment he did not care. For one of the few times in his career, he felt shaken. He went on, "PK"—no one called the Chairman by her first name, not more than once—"when the Purists see it, they'll scream for our blood, and I think they'll get it. The document is plenty to drive everyone cool or lukewarm to us into their camp, and to make our friends look for a good place to hide."

"Very much my own assessment, Roupen." Hovannis glanced at Paulina Koch with surprised admiration; she might have been talking about the pricing policy for oxygen tanks. She asked, "What response do you recommend we make, then?"

His grin was frightening. "I wish the damned ship had crashed before that crew of traitors ever got the chance to file their report."

"That, unfortunately, is not relevant at this point in time."

"I suppose not," Hovannis said regretfully. He scratched his head. "Next best thing would be to have the stinking report disappear from the files."

"I thought of that also," Paulina Koch said. "I concluded it would yield us no lasting benefit. Eventually the crew of the *Jêng Ho* will simply refile: probably when they notice no outcry has erupted from the report."

"But then we'll be ready for them." Once Hovannis had an idea, he ran with it. "If they start raising a stink, they'll do it through channels at first. Computer foul-up explains anything once, especially since odds are those bastards don't even realize the mess they've landed us

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in. Hell, they may even be naive enough to believe the file got erased by accident twice. Any which way, we'll have bought ourselves some time."

"Maybe even enough to see us through this session of the Assembly," Paulina Koch mused. "And an old scandal, even if unearthed, will not do us nearly so much damage next time as a fresh one now. Very well, Roupen. The critical issue, you understand, is to make certain the deletion is either invisible or, if by some mischance it should be noticed, cannot be traced to your intervention."

Hovannis nodded. "Depend on it. I'll handle the erasure myself." His smile did not touch his eyes. "After all, we don't need more people thinking about Bilbeis IV than are already."

"No."

"May I use your terminal?" The question was only formal.

"No," Paulina Koch said again. Hovannis stopped in surprise, his stubby-fingered hands poised over the keyboard. She went on, "Please note, Roupen, I have not told you what to do, and I can truthfully state that under oath. Nor do I care to see you do anything."

The External Affairs Director's eyes lit in anger, but it faded as he thought things over. He gave a grudging nod. "Sensible, from your seat."

"Indeed."

"All right." Hovannis wet his lips. Paulina Koch was one of the few people who made him nervous, and not because she ranked him. He had to work to bring out his next words: "Remember, though, PK, if the wave rolls over me, I won't be the last one to drown."

"Who said anything of waves? All we aim to do is keep the water calm and quiet. Thank you for coming up, Roupen. Now I hope you will excuse me; I have other business to attend to."

Paulina Koch watched him go. Her brows drew together, very slightly. A capable man, yes, and one who could prove dangerous—no one had had the nerve to warn her that way in a long time. But their interests here ran in the same direction. And the dismissal she'd given him would keep him in his place a while.

She set the matter of Bilbeis IV aside, turned to the other printouts still cluttering her desk. She could not ignore all of them because of a single problem elsewhere; that would have been bad management. She had kept the Survey Service running smoothly for nineteen years; she wanted to keep her seat at least that much longer.

Hovannis's abrupt return startled her. "Yes?" she said coldly. What was he doing back here?

"It's gone from our files."

"I assumed so. I did not need to hear that, nor want to. If you are seeking to implicate me in what you have done, you may have succeeded, but I assure you that you will not enjoy your success much."

"I'm not stupid enough to think I would, PK."

"Well then? I assume this visit does have some reason?"

Hovannis started to sink into a chair, hesitated, waited for the Chairman's nod, then finished sitting. "You know that survey ships' reports, like most other government reports, go into open access."

"How could I not know that? It helps

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the Purists meddle." Paulina Koch had been maneuvering behind the scenes for years to get Survey Service records shifted to restricted access. The Purists were only part of her political consideration. Too many things happened on primitive planets that the public could not be expected to understand. Bilbeis IV was a perfect case in point. The Chairman nodded slowly, as if to herself. "You are, I presume, about to tell me seventeen people on thirteen different planets have already made copies of the report. If so, we are finished, and nothing to be done about it."

"If that were so, I'd still be downstairs, working on my vita so I could start looking for another job." That was brutally candid enough to surprise a smile out of Paulina Koch. Hovannis saw it with some relief; it would soften the bad news he did have. "One copy was accessed, less than half an hour before I dumped the file."

"Tell me the rest."

"Accessor is Isaac Fogelman, home planet Hyperion."

"Have you checked on him? I've heard the name, I think."

"Not yet. You needed to know ASAP."

"Mmp." The grunt told Hovannis he was forgiven. Paulina Koch said, "Let's see what the data store tells us about him. No, don't leave, Roupen; seeing who uses Survey Service information will not incriminate me unduly." She punched buttons, grunted again. "University of Hyperion, anthropology department."

"Bad," the External Affairs Director said. People who chose teaching over fieldwork had no real notion of what conditions were like away from their keyboards and terminals. Most of them were Purists, and most of the ones who weren't were sympathizers.

Studying the readout, he saw Fogelman was like the rest. Several of his publications criticized Survey Service field technique, though he himself had stayed on Hyperion the last fifteen years. He was also a contributor to the Noninterference Foundation, a private watchdog group that monitored the Service. If he wasn't an out-and-out Purist, he came too close for comfort. "Bad," Hovannis repeated.

"Yes," the Chairman said. "When he makes his dramatic revelation, he will have the credentials to be taken seriously."

"If his copy of the text was to vanish also—"

"No," Paulina Koch said, and then reconsidered. "Well, perhaps. It might even prove especially embarrassing to him if it happened after he accused us of everything under the sun, and left him without proof. Better still, though, if he never has the chance to accuse us of anything. In this area, any publicity is bad publicity: the less anyone outside the Service thinks of Bilbeis IV, the better."

There Hovannis agreed with her completely. "I've done some checking. The Service has contacts with a discreet individual on Hyperion, one who, by luck, operates out of New Westwood, the university town."

"Yes, that is fortunate," the Chairman agreed.

Hovannis waited for a more definite order, then realized he would not get one. "It will be attended to," he said.

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New Data on L. RON HUBBARD'S

WRITERS OF THE FUTURE CONTEST

by Algis Budrys

Good news. L. Ron Hubbard's Writers of The Future Contest has been extended to the end of 1987, and even if you don't win a prize there are fresh features that could do you a lot of good.

First, there are meaningful no-strings cash prizes, and fringe benefits including recognition, encouragement, and a publication offer to the winners and some runners-up. Added have been faster reporting times, professional writing hints on your stories that *nearly* made it, and a series of invitational tuition-free special workshops for winners and some finalists, taught by expert speculative-fiction writers. So if you're an aspiring author of fantasy or science fiction, with no more than three short stories or one novelette professionally published, here's all you do: Enter the contest.

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A rational approach would be to borrow or buy the anthologies and study them. (The first two have an obsolete Contest address in them, but the mail will be forwarded.) They're $3.95 paperbacks, and you might as well see what you've been missing.

Meet you at the Awards?

— Algis Budrys

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Bureaucratic language sometimes had its advantages; he could truthfully deny under oath that he had ever said he would do anything.

The discreet individual had already made electronic hash of all the floppies in Fogelman's study, backups included, with nothing more elaborate than a hand-held magnet. He thought trashing the professor's entire data storage system was about the craziest commission he'd ever had, but he got paid for results, not questions. Very well paid, in this case, certainly enough to keep him incurious.

The screen of Fogelman's terminal came on, filling the study with pale gray light. The discreet individual got to work again. Fogelman's security precautions were plenty to keep amateurs from getting into his files, but the discreet individual was no amateur. Besides, he had been briefed about likely keywords and traps, which made the job go faster than it would have otherwise.

One thing the discreet individual had not been briefed about was Professor Fogelman's weak kidneys. As he usually did, Fogelman woke up in the middle of the night. The light downstairs bothered him. He sometimes left his computer up, but he thought he'd turned it off before he went to bed. Muttering to himself, he went down to check.

The discreet individual heard him coming, of course, and shot him through the head with a discreetly silenced weapon when he appeared in the study doorway. Fogelman lived alone; his neighbors would never notice the small noise he made falling. The discreet individual went back to what he had been doing.

When he was through, he efficiently ransacked the place—he had not been paid not to—and left through the same window he'd used to enter.

Unlike the luckless Fogelman, he had no trouble sleeping when he got home.

Stavros was the first one to the seminar room, which showed how eager he was to get on with his presentation. Cooling his heels outside while the group who had the room before Fogelman's finished, he wondered if eagerness was cause enough to drum him out of the grad students' union. It probably was, he decided.

The session in the room broke up. The people in there came out excitedly discussing something or other that wasn't anthropology and made very little sense to Stavros. He pushed through them and found a seat.

One by one, the other members of the seminar drifted in. Some wanted to talk about their presentations. Others were too nervous about speaking in public to care to put out their conclusions more than once. Stavros kept quiet too; he wanted to save his ammunition for Fogelman.

He was no poker player, though. "You look like the cat that ate the canary," the girl from Earth said. She was sitting across from him.

"The what?" he said foolishly, not following the idiom. What was her name? He'd only heard it at the meeting last week. "You're Andrea Dubois, aren't you?"

She smiled, pleased he remembered. She was a big pink blonde girl, and thus

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seemed strange to Stavros; most of New Thessaly's population was Hellenic, as slim and dark as he was. She said, "How's this—you look like someone sitting there waiting for the Academic Medal to go on your chest."

"I think I did a good piece of work." He still didn't want to talk about it, but she was a pretty girl, obviously bright or she wouldn't be here, and so he didn't want the conversation to end there either. He said, "You speak beautiful Anglic—you sound like the instruction tapes I learned from."

"Thanks." She smiled again. "I wish I could take more credit for it, but I just happen to come from Perth, and everyone in Australia talks this way."

"I'm jealous." Anglic was the most widely used tongue in the Federacy, and the universal language of scholarship and commerce. Native speakers naturally had an edge over those who had to learn it as a second language.

Or so Stavros thought. But Andrea said, "It's not as big an advantage as you think. Because I use Anglic all the time, I'll probably have more trouble than you in picking up alien languages."

"Well, maybe," Stavros said dubiously.

Without heat, they argued about it for a while. Andrea looked at her watch and said in some surprise, "Professor Fogelman is very late."

"He makes a habit of it," Stavros chuckled. But when Fogelman did not show up after another ten minutes, he began to wonder himself.

The door opened. But it was not Fogelman who came into the seminar room—it was one of the administrative aides from the anthropology department. The fellow looked shaken; his voice wobbled as he said, "May I have your attention, please?"

The class quieted. He went on, "I'm extremely sorry to have to tell you that Professor Fogelman died last night. His body has just been found at his home."

The seminar group exclaimed in shock and dismay. Stavros crossed himself. He had grown agnostic since coming to the university, but childhood habits still returned in times of stress. "What did he die of?" someone called.

The aide looked unhappier yet. "Professor Fogelman appears to have been murdered, apparently in the course of a robbery. Police investigations are continuing."

The second round of gasps and groans was louder and longer than the first. Stavros was too stunned even to join in. Fogelman had been too full of vigor—to say nothing of being too much a fixture on campus—to imagine him dead.

Andrea apparently accepted the idea more quickly, but then Stavros didn't think she'd done her undergrad work here, and so she'd only seen Fogelman once or twice. She asked, "What does this do to our enrollment in the seminar?"

"Professor Richardson has agreed to take over the course," the aide said. Andrea looked relieved. Odds were the girl from Earth didn't know Richardson either, Stavros thought. Richardson specialized in physical anthropology, and thought the cultural half of the discipline a waste of time.

"Get ready for fifteen weeks of potsherds and middens," Stavros whispered to Andrea.

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The aide left. The grad students trailed after him, still struggling to accept what they'd heard. One spoke with gallows humor: "If I'd known he was going to get himself killed, I wouldn't have worked so hard."

"Nice pragmatic fellow," Andrea said, rolling her eyes.

"We both know how he feels," Stavros said. "A lot of the time, I'd agree with him. Not now, though."

"No?" Andrea gave him a curious look. "You *are* carrying something big there, aren't you?"

Stavros hesitated. Sometimes professors ended up publishing work graduate students did. Sometimes other grad students pulled the same stunt. He sometimes thought anybody who wasn't a little paranoid had no business in grad school. But Andrea was right—he did have a blockbuster in his briefcase, and he felt he'd explode if he didn't show it to someone.

"Do you really want to see it?" he said. "Let's go over to the Bistro. What they do to *dolmades* is a crying shame, but they're cheap and close."

It was Andrea's turn to pause, but after a moment she laughed and said, "All right, you've got me curious. And what are dol-whatevers?"

"Grape leaves stuffed with lamb and rice. They're an ancient dish; the recipe goes back to Greece, the Earth region the settlers from New Thessaly came from. The cooks at the Bistro don't season them right, though."

"How long has New Thessaly been settled?" she asked.

He shrugged. "A couple of thousand years. Why?"

"Just that I'd be surprised if your people didn't use native spices in their cooking. Everybody does. For all you know, these *dolmades* may be more like the originals than the ones you're used to."

That almost made him angry, as if she had somehow maligned his home planet. A few seconds of reflection showed she was right, but that did not help much. "Come on," he said gruffly.

Again, he didn't quite know how to take the appreciative noises she made over the Bistro's *dolmades*. After a couple of glasses of red wine, he worried less. He fiddled with his briefcase. "Are you ready yet?" he asked.

"Eager, eager, eager," she teased, but good-naturedly. "Yes, show me your great mystery, now that I'm not distracted by starvation."

He got out the hard copy of his paper, and ordered *baklava*—not even he could fault the way the Bistro made *baklava*. Andrea paid him the highest compliment of all: she left hers untouched while she read.

She looked up after a couple of pages. "You're sure you're not exaggerating this?"

"It's all straight from the Survey Service report. If anything, summarizing it cuts the impact because so much of the documentation and supporting detail boils away."

She gave an absent nod; she was reading again. When she was done, she knocked back the wine in her glass with a single gulp. "You weren't kidding," she said quietly. "What are you going to do now?"

He shook his head. "I just don't know. I was going to ask Fogelman, but now—what a mess this is."

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He felt the inadequacy of the words, but Andrea understood what he meant. "If I were you, I'd be careful about showing this to a lot of people, at least ones you don't know you can trust," she said.

"Don't be silly," Stavros started to say. He stopped. Knowing something important could be dangerous; New Thessaly's politics had proved that more than once. He touched her hand. "I'm not sorry you saw it."

"Good."

"Unfortunate the professor had to go downstairs at such an inopportune time," Paulina Koch remarked.

"Yes, very," Hovannis said, and added dryly, "especially for him."

"No danger of any of that being traced to us?"

Hovannis snorted. "Not a chance. The deal went through an intermediary; our friend doesn't have any idea who he was working for. He didn't even know exactly what he was supposed to do—just to scramble the computer system was all the instructions he ever got. They may catch him; Hyperion has a fair constabulary. It won't do them any good."

"All right. That suffices, I suppose; you've already told me more than I ought to know."

"I apologize for the need," Hovannis said. The External Affairs Director left. Paulina Koch was very good at putting data in compartments. That was one reason she made such an effective Survey Service chairman. She began raising the walls around the compartment that held the Bilbeis IV affair. Eventually, she

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was sure, those walls would be too high to see over, and she would forget whatever was behind them.

If Stavros hadn't taken off his headphones to change disks on the music player, he never would have heard the knock on the door. He rushed to open it, expecting Andrea. She had been over once to see the Survey Service report on Bilbeis IV, and again the next day just to talk. Stavros hoped for something more.

"Hello!" he said enthusiastically—too enthusiastically, for standing in the hallway was not Andrea, but a middle-aged oriental man whose face was vaguely familiar. Stavros's tongue stumbled over itself. "Er—yes?"

"I'm Van Shui Pong," the man said, "from Hyperion Newsnet." He dug out a holo ID, but Stavros did not need it. He had seen the other now and then on the screen; no wonder he'd thought he recognized him.

He stepped aside. "Come in, Mr. Pong. What could Hyperion Newsnet possibly want with me?" If anyone was less newsworthy than an anthropology grad student, he thought, whoever it was probably hadn't been born yet.

"It's Mr. Van," the newsman said, with the air of someone who had said it a great many times. He had a round, good-natured face, but his eyes were disconcertingly keen when he turned them on Stavros. "You were one of Professor Isaac Fogelman's students, weren't you?"

The polite smile vanished from Stavros's face. "Yes. What of it?" Fogelman's murder hadn't even made the news.

"Very possibly, nothing," Van admitted. "There was something in the constabulary report strange enough to make me do a little checking on my own, though."

"What's that?" Stavros recovered his manners again. "Here, I'm sorry; sit down." He waved to the less disreputable of the two chairs in the dorm room.

"Thank you. As I say, it may well be nothing. Still, I find it strange that a burglar would take the time to dump an entire computer memory. Suppressing the internal surveillance program is normal, but this went far beyond that. There's no doubt it was done deliberately; all of Fogelman's floppies were blanked too." The newsman rose in sudden concern. "Are you all right, Mr. Monemvasios?"

"Yes," Stavros said, but the word rang hollow in his own ears. He sat down himself, heavily. For the first time in his life, he knew what fear felt like.

Van saw his agitation. "You know something of this, or can guess?" he asked eagerly.

Stavros hesitated. Andrea's warning abruptly seemed much better advice than when she'd given it. Telling Van about the floppy leaning against his computer could land him in genuine trouble that keeping quiet would avoid. But if Fogelman had been killed to make sure the report on Bilbeis IV never surfaced, then staying silent would only let the killers, whoever they were, get what they wanted. But, Stavros thought hopefully, most likely there was no connection between the burglary and the report but the long arm of coincidence. The Federacy was a big place; anything

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could happen, and probably would, somewhere.

Stavros got up. "You'd better see this, and tell me what you think." Van followed him to the computer console. He put in the floppy. The screen lit. No going back now, he thought. He did not feel the way he imagined investigators were supposed to feel. He just felt nervous.

Van Shui Pong went through the abstract of the report and got a couple of chapters into the body before he hit the pause button. When he looked over to Stavros, all the good humor had fallen from his features. "I take it you believe this document to be genuine," he said at last.

"Of course it's genuine," Stavros said indignantly. "I told you, Professor Fogelman gave it to me. His fingerprints must still be on the jacket of the floppy, if you doubt that."

"Not what I meant." Van held up a hand. "I am no anthropologist. Is this an authentic Survey Service document? The Service is an influential arm of the Federacy, and not forgiving to anyone with the gall to call it to account. I'd hate to have my career blighted for no good reason."

"Here—look at these, then." Stavros secured the floppy with the Bilbeis IV report and took out a couple of others.

Van went through them as carefully as he had the first one, perhaps more so. "If it is a forgery, it's masterfully done," he conceded. "All right, I'm willing to spend the money to check one step further. To spend the Newsnet's money, anyway—I'll have to go back to my office to use the accessor there. Do you want to come along?"

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Nothing could have held Stavros back. He grabbed a cap. "Let's go." Acessors to link in with computer systems planets away were uncommon and exorbitantly expensive. Of course the university had one, and Fogelman had doubtless used the anthro department budget, not his own, to get the up-to-date set of floppies for his seminar. The newsnet setup might well be the only other one on Hyperion except for the local government's.

Stavros had never been to the newsnet office before. It reminded him of the way the university got the week before exams: both had the same air of intense concentration and near-panic aimed at getting something important done on time.

"Better be good," somebody called as Van sat down in front of the accessor, "or they'll make you pay for it out of your own pocket."

"Funny, Flavius, funny." The newsman punched buttons, paused in thought, punched again. He gave Stavros an apologetic glance. "I haven't used this gadget in a while."

Despite the caveat, he did not take long to make the connection with the Survey Service archives. BILBEIS IV, MOST RECENT SURVEY REPORT, he typed.

SURVEY SERVICE REPORT—BILBEIS IV—FEDERACY STANDARD YEAR 1186 appeared at the top of the screen.

Stavros paid no attention to the text below. "That's not right! That's the old report—the one that tells how what's-his-name got this whole mess started."

Van typed, MORE RECENT REPORTS?

NO MORE RECENT REPORTS. The reply was immediate and uncompromising. Van looked at Stavros, who wanted to hide under his chair. He wondered where Fogelman had come by the floppy, if not from the Survey Service. He could not imagine the professor manufacturing such a document, or how he would go about it even if he wanted to. The video perfectly matched the first report's pictures, and supported the text it accompanied.

"It's crazy," Stavros said. Van Shui Pong did not answer. Grasping at straws, the grad student suggested, "Ask when the next report from Bilbeis IV is due, if they have no record of it now. The place must be up for resurvey—fifteen hundred years is the standard interval for pretechnological worlds."

Shrugging, Van typed in the question. NEXT REPORT EXPECTED WITH RETURN OF SURVEY SHIP *JÊNG HO*, was the response. Van shrugged again. "Your floppy has that much right, at any rate."

"Well, when is the *Jêng Ho* coming back?" Stavros asked. Van entered that question too. They both waited impatiently, hoping the reply would do something to clear up their confusion.

The screen stayed blank for some time. "Must be going through a different data base," Van said. The words were barely out of his mouth when the answer came: SURVEY SHIP *JÊNG HO* SCHEDULED TO RETURN FEDERACY STANDARD YEAR 2687:139.

"What's the current FSY date?" Stavros asked. The Federacy Standard Year, based on Earth's, had 365 days of 86,400 seconds each. It gave thousands of planets, each with its own nat-

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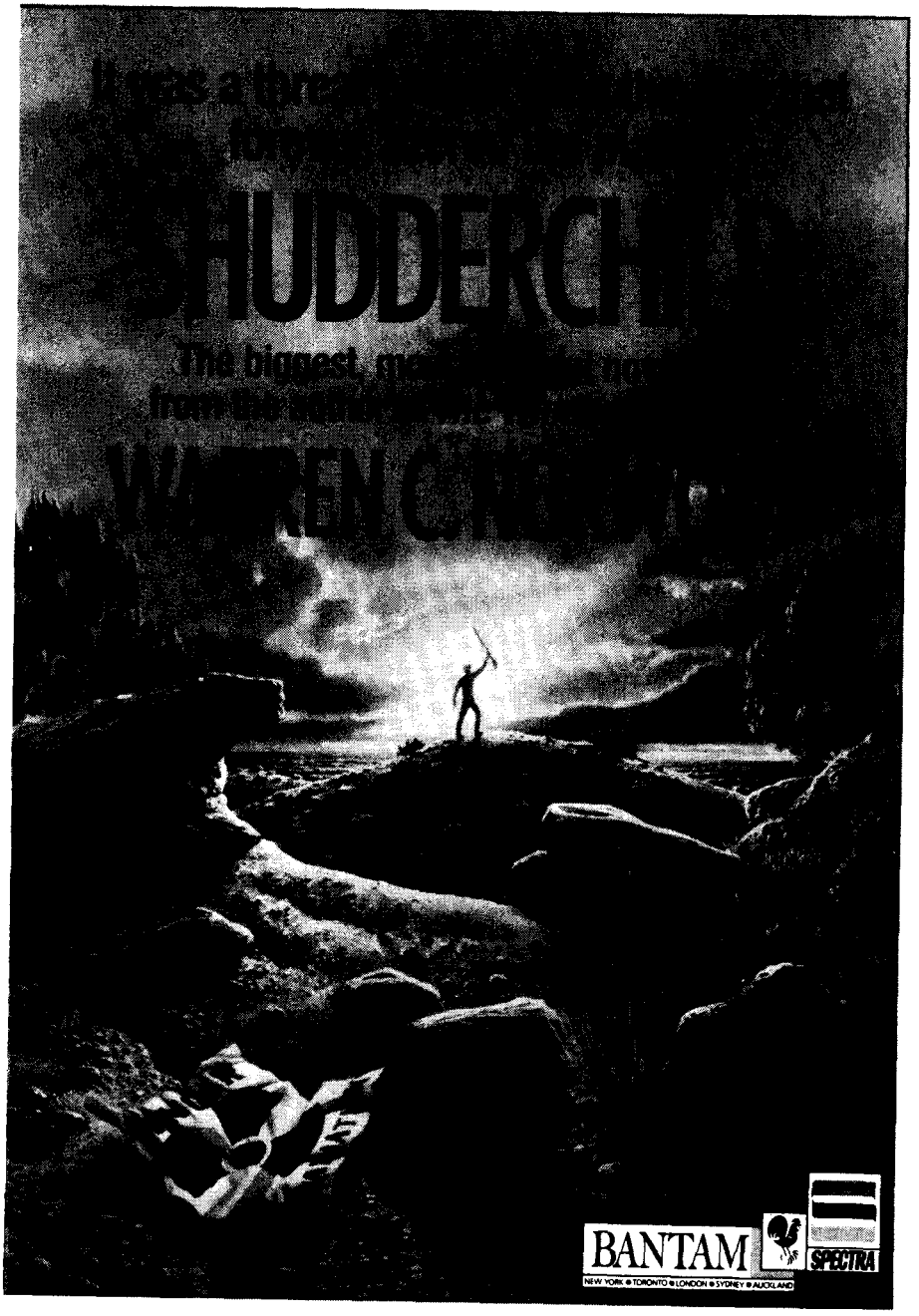

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ural periods, a common way to reckon time. Like Hyperion, though, most of them used local time for everything but Federacy elections and other matters of offworld importance. Stavros hadn't worried about FSY dating in months.

Van dealt with it more often; as a newsman, he used FSY datelines to see how recent stories set away from Hyperion were. But he did not have the FSY date at the tip of his tongue either. He fiddled with his watch, frowned, cleared it, tried again. "I knew I had to get this thing fixed," he muttered. "It says it's already FSY 2687:157."

"That's crazy," Stavros agreed. "Ask somebody else."

Van did, loudly. "It's 157," three people yelled back, one of them adding, "*for another three hours, anyway.*"

"But that makes no sense," Stavros said. "If the *Jêng Ho* was due back from Bilbeis IV eighteen days ago, the crew must have filled its report already. Why isn't it on-line for accessing?"

"I'm beginning to think they did file," Van said, and he was not talking loudly at all now. "If the report you have is the real one, and it's missing from the Survey Service files, and your professor had all his data—to say nothing of himself—erased just after he pulled it out, what does that suggest to you?"

Stavros thought about it. "Trouble."

"To me too." But Van sounded as though he enjoyed the prospect.

"You appear to have made a mistake, Roupen," Paulina Koch said.

"So I do," Hovannis replied stolidly.

"Is that all you have to say?" The Survey Service Chairman seldom let anger into her voice, but this was an exception. The first tape she'd just played for Hovannis was of some muckraker's story from the Hyperion Newsnet. It quoted at length from the Bilbeis IV report Hovannis had been so sure he'd squelched, and then went on to scream coverup. The second tape worried her more. She had just got that one. The story on it was much like the one from Hyperion, but it came from Fezzan, a dozen light-years away.

"What do you want me to do, jump off the top of the Survey Service tower?" Hovannis was finding that Paulina Koch no longer intimidated him as much as she once had. They were in the same starship now, even if it had sprung a leak. The thing to do was patch it, not argue. "*I scrubbed the report, but I* missed the notice of the *Jêng Ho*'s return date. The snoop spotted it and drew the right conclusions, that's all."

"I've been called into the Assembly for more questioning tomorrow," the Chairman said.

"And?" Hovannis waited for her to tell him she was throwing him out the airlock. If she tried, he had no intention of going alone.

"And I will deny everything, of course," she replied. "The initial report was bad enough. It would have cost us embarrassment, funding, and influence. Now we have suppressed evidence and involved ourselves in various other unsavory activities. If those are discovered, we stand to lose more than influence."

Hovannis gave her an admiring glance. "The whole thing is a forgery, then?" She had balls, if she thought she could bring that off.

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"From top to bottom. We have no record of any such report, so it could never have entered our files in the first place. Obviously, then, it must be a fabrication. How will the Assembly prove otherwise, from the computer records?"

"No way, of course." The External Affairs Director had already corrected his blunder; the *Jêng Ho* was now due to arrive any time, at least in the Survey Service data bank. He amended, "That's just from the computer records, of course. If they start summoning the *Jêng Ho*'s crew, everything is out to lunch."

Paulina Koch smiled a wintry smile. "Not necessarily. They will take a little while to think of that, and we already have."

"Yes, I see what you mean," Hovannis said. He did not add anything more. If and when he tackled that job, he planned to handle it so indirectly no trace would ever lead back to him. He even shied away from thinking about it too much, and was relieved to turn back to more immediate concerns. "We ought to check out where Mr. Van Shui Pong is getting his information, with Fogelman's data base gone."

"You really think it is?" Paulina Koch asked. "I'm beginning to wonder."

"I've used that person before, for one thing and another. He's reliable."

"If you're so sure, Fogelman must have passed it on to someone before your friend visited him. Not to this Van busybody, or we would have had him yapping at us sooner. To whom, then?" It was not really a question; the Chairman was thinking out loud. "To one of his students, perhaps, for a class project."

"Sensible," Hovannis said. "Fogelman pulled a lot of recent survey reports, not just the one on Bilbeis IV. We can check out why he wanted them without too much trouble. Then we start narrowing things down, and then, well, I suppose another visit from that discreet individual."

"Yes, overall that bears the potential for greatest benefit to the Service. With the focus of the infection removed, the hubbub should die down in fairly short order. Tend to it, Roupen; I have to prepare my testimony."

Tend to it, Roupen, Hovannis thought sourly as he left the Chairman's office. He would; his neck was on the block too. But afterwards, Paulina Koch would owe him a debt. He intended to collect.

Stavros thumbed the remote unit; the holo screen came to life. "What's on?" Andrea asked. They were studying together. They both found Professor Richardson about as exciting as watching a shrub grow, and broken bits of pots did not much interest either of them, but Richardson expected her students to work.

"The news," Stavros answered.

That was plenty to make Andrea put down her notes. Hyperion Newsnet had been flailing away at the Survey Service for a couple of weeks now, with as yet no reply. The long silence from the immense government bureau made Stavros think of someone sticking a pin in a dinosaur. First the beast had to notice you were there at all, and then it would take a while longer to figure out what to do.

Of course, if it did decide to flick its tail, it was apt to squash you flat. . . .

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The lead story was local—an oreboat had capsized on some river over on the western continent, killing four sailors and losing a big cargo of rare-earth metals. "In offplanet news," the newswoman began, and Stavros tensed, but the item was about the crash of a starship full of gamblers trying to land at Carson Planet. "Three hundred seventeen people are known dead; the complete toll will not be known until all the rubble has been cleared from what was until recently a spaceport terminal building."

"Four people here count for more than hundreds somewhere else," Stavros said scornfully.

"Isn't it the same on your world?" Andrea asked. "It is on Earth. Somebody here may know one of the ore-haulers, or know someone who does. That makes that story more important in New Westwood than one that happens worlds away."

Stavros had not thought of it that way. Indeed, he had not thought much about it at all. He just knew he was impatient for some kind of response from the Survey Service, and frustrated because there was none.

"I suppose you have a point," he admitted. "You know—"

He stopped. Van Shui Pong was on the screen. "In the continuing Survey Service scandal," Van declared, "Chairman Paulina Koch has at last issued a statement." Stavros's whoop drowned out Van's introduction of the Chairman.

"She looks so ordinary," Andrea said. Dowdy was a better word, Stavros thought. Paulina Koch reminded him of a gray dumpling. The plain suit she wore did not flatter her figure. The curtains behind her podium were bright blue, but she contrived to fade into the background nonetheless.

She was saying, "The Survey Services regrets the delay in response to these allegations, but did not believe they could possibly be taken seriously by anyone aware of the Service's long and successful record of integrity both within the Federacy and in its dealings with peoples at a pre-Federacy stage of culture. The Service must deny both the charges leveled in respect to activities conducted on the pre-Federacy world Bilbeis IV and those even wilder accusations relating to removal of data from storage. They are baseless, without foundation, and insusceptible to proof."

"What about the report on Bilbeis IV, then?" a newsman interrupted.

She gave him a chilly look. "The report that purports to be about Bilbeis IV, you mean. It is a forgery, and not a very clever forgery at that. Were I here to guess instead of telling you the facts as I know them, I might give you more than a fair idea of the perpetrators of the hoax."

Stavros grunted. He could predict where that line would lead the reporters. "Who?" three of them yelled together.

"Who else but the Purists?" the Chairman replied. "For almost as long as the Survey Service has existed, they have tried to curtail and even halt legitimate scientific inquiry. In the past, I did not question their motives, no matter how strongly I disagreed with their conclusions. When they stoop to tactics such as this, however, I can no longer sit idly by."

"Turn that off," Andrea said in dis-

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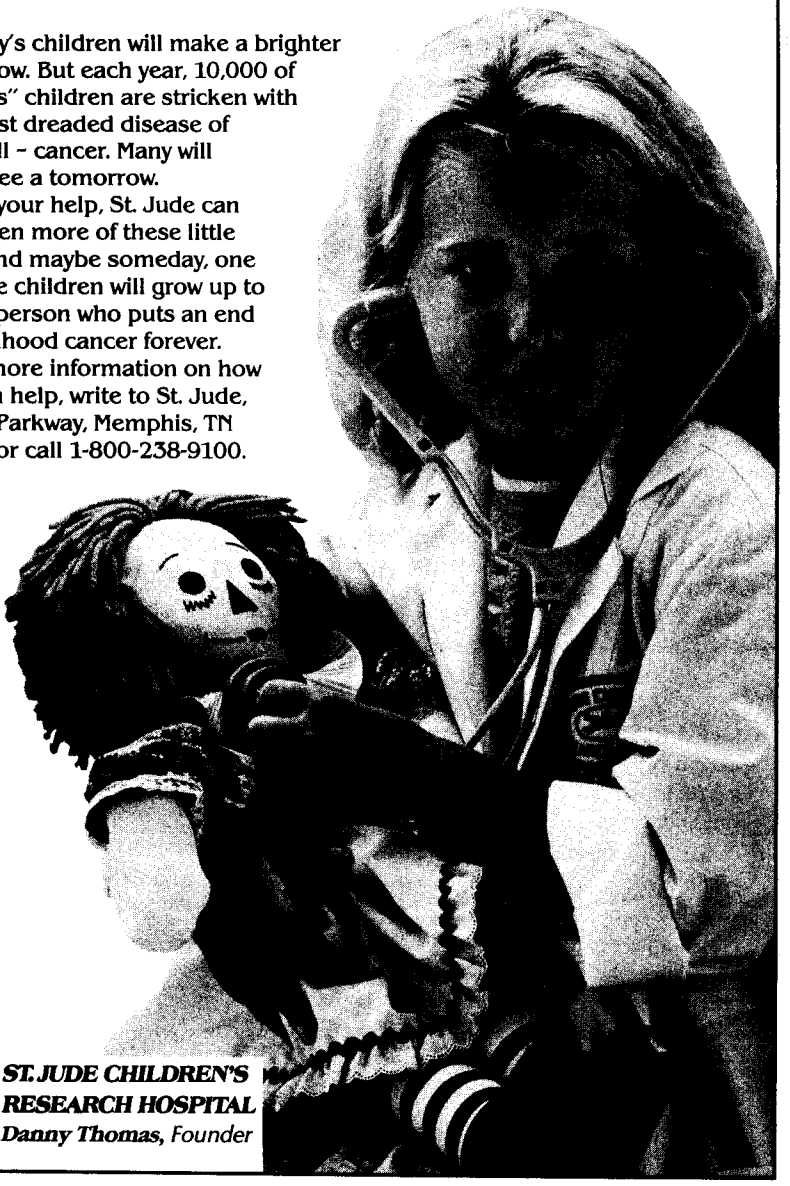

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gust. "She's got them all eating out of her hand. Why won't they *see?*"

Stavros was reaching for the control when a newswoman called to Paulina Koch, "You haven't said anything about the Survey Service computer showing the *Jêng Ho* due back on 139 when it was already 157." The grad student decided to keep watching a while longer.

"Computer error is such a common excuse in a certain type of fiction that I am aware it is difficult to accept in fact," the Chairman said calmly, "but if it did not occur, it would never have become such a cliché. An investigation into the nature of the error is now ongoing, and will be published when complete. Any required modifications in hardware or software will of course be implemented."

At that, Stavros did turn off the holo, jabbing the switch with ferocity directed away from the image of Paulina Koch. She might as well have been coated with some fluorinated resin; nothing stuck to her. "No one even asks about Professor Fogelman," he said bitterly.

"What good would it do?" Andrea said. "I can figure out what she'd say already: that Fogelman's death was just a coincidence, and how can anyone possibly tell what was in his data store, as it has unfortunately suffered erasure —she'd never come right out and say anything as plain as 'been erased.' "

"You're right about that." At another time, he would have found her observation wryly amusing; now he was too angry to rise to the bait.

She said, 'I wish we could get hold of the *Jêng Ho*'s crew directly, instead of waiting for whatever the Survey Service decides to claim is their report."

Stavros sprang to his feet, rushed over to her, and gave her a hug. "Let's try! Van ought to know how to get hold of them without going through the Survey accessing system. They can't be in on this scheme of the Chairman's, or they never would have filed that report in the first place."

Andrea did not pull back right away. She looked Stavros in the eye—they were about the same height. "Good idea. Call Van."

"He doesn't like me to at night. He's usually busy working up his stories for the newscasts. I'll do it in the morning. No—you do it. You've earned the chance to be in on this."

"All right, I will." To Stavros's surprise, she added, "Thank you."

"Are you sure I'm doing you a favor? You were the one who told me this might get dangerous."

"It's already dangerous, if we're right about Fogelman. But if we are, the Survey Service has already done a lot worse than cultural interference."

"Yes. We can't prove that, though."

Andrea clucked her tongue in annoyance. "We can't prove any of this, not when the Chairman denies the report on Bilbeis IV is genuine. That's why we need to reach the people who wrote it; they can give her the lie. I'm surprised they haven't started squawking before this, as a matter of fact."

"So am I. It worries me."

"Me too, but I can't do anything about it now. What I can do—and you too—is get ready for the next quiz Richardson is going to drop on us. We ought to get those scrapers and tureens from Cappalli III up on the screen. Then, we

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can do something about right this minute."

Stavros laughed. "There's practicality for you." He fiddled with the controls. The screen lit, this time full of implements of bone and baked clay. "These are from the small continent in the northern hemisphere—what's its name?"

"Maximilian."

"That's right. I don't know what you're worrying about. You know the material a lot better than I do."

"I want to do a good job."

Even an anthropology grad student can examine only so many artifacts before the brain begins to numb. Andrea and Stavros reached that point at about the same time. She was the one who finally said, "Enough!" and turned off the text.

"What now?" Stavros asked.

"Let's check the entertainment menu. After all that, I need something mindless." She found a costume drama. Some of the costumes were hardly any costume at all. "Like that?" she asked ironically, noticing Stavros's sudden interest in what was on the screen.

"More interesting than ladles and vials," he retorted. "Seriously, though, I was shocked silly the first time I saw bare breasts on the holo. They don't show that kind of thing on New Thessaly; the church is strong there."

"Were you?" Andrea raised an eyebrow. They watched the show sitting close together, as they had been while they were studying. When it was done, Stavros thought Andrea would leave. Instead, she leaned back in her chair and stretched lazily.

He slid an arm around her shoulder. She moved closer to him. "What else have you learned on Hyperion?" she asked.

"Shall we find out?"

Some time later, she leaned up on one elbow in his narrow bed. "You picked up all that in the last few years here?"

He sat up himself, offended. "Good God, no! After all, Andrea, I'm twenty-nine years old."

He watched the flush rise under her fair skin as she blinked in confusion. "But you said—"

"I said I didn't watch that kind of thing on New Thessaly. I didn't; my planet holds to keeping what it reckons private matters private. That doesn't mean we don't do them, though."

She laughed out loud. 'You don't need to sound so defensive. I'm glad, that's all."

"Hmm. Prove it." Stavros tried to make his voice gruff, but he was laughing too.

She poked him in the ribs. "How am I supposed to do that?"

"Think of something."

She did.

The discreet individual was not altogether pleased with the way things were going. It was not any failure to turn a profit that disturbed him. His fees, especially lately, were keeping him in a luxury that satisfied even his exacting standards.

Rather, his problem was figuring out a quiet way to earn this latest commission he had received. The woman who proposed it to him was the same person who had given him his last big job. She was so vague about this one that he was

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sure she was only an intermediary, and probably not the first in a chain.

Despite such precautions, he suspected he could make a good guess about where the chain's other end lay. He tried not to make the guess, even in his own mind. Some things, he felt instinctively, were better left uncontemplated.

The problem had two parts. Neither was easy, and the second, rare in his line of work, required him to draw his own conclusion and act on it. Bugging the comm lines into Hyperion Newsnet had been tough enough, but at least he was used to doing that. Now he had to decide just where Van Shui Pong was getting information he shouldn't have.

The discreet individual punched for the latest set of playbacks. A burst of static made him scowl. The next several conversations were garbled. The newsnet had most of the latest confidentiality protectors.

Not all of them, though. After a while, his electronics outdueled the opposing defense systems and he was able to eavesdrop again.

He had done some discreet checking on Van's contacts, and found that two in particular had connections of interest to his carefully unthought-about employer. He had not been able to decide which of them knew more; they both knew too much.

He wondered whether it mattered. Dealing with one ought to teach the other to stop meddling. He was not wasteful: no point to getting rid of both of them unless he found himself without another choice.

In spite of his income, one luxury he could not afford was impatience. He wished he could; Van Shui Pong talked with a lot of people, most of them dull, and most of them absolutely unconnected with this business.

At last Van got another call from one of the pair the discreet individual was interested in. After he finished listening to the tapped conversation, he nodded thoughtfully. These people were doing their best to be difficult. In the abstract, he could almost wish their best to be good enough.

He was not, however, given to thinking in the abstract.

"He'll check," Andrea said with satisfaction as she switched off the phone. "He says it may take a while to work around the Survey Service network to get in touch with the *Jêng Ho*'s crew, but he thinks he can do it. He was boasting about his connections when he got a call on another line and had to give me a quick goodbye."

"All right," Stavros said. "I hope those connections come through."

"So do I. Reporters always boast about connections, whether they have them or not."

Stavros's long, dark face wore a frown well. Not for the first time, he had the feeling of being in over his head. Actually, he'd had that feeling from the moment he'd seen the report on Bilbeis IV. Running into it when thinking about a woman he cared for, though, was different from facing it when confronting a large, powerful, hostile organization.

He wondered how Andrea came to speak of reporters with casual familiarity. Van excepted, he had never dealt with one in his life. New Thessaly was not that kind of place. Gossip there was

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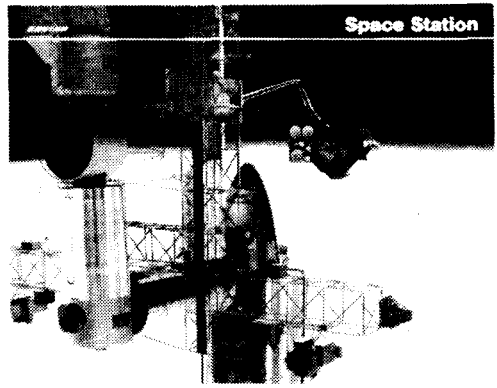

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as incessant as anywhere else, but it was local and amateur, not industrialized.

Andrea was getting to know him well enough to guess some of the things behind his silence. She said, "Don't worry. We'll just do the best we can as long as we can, with us and with Bilbeis IV."

That was advice he might have heard on his home planet, and down-to-earth enough to shake him out of his apprehension. "Fair enough," he said. "I suppose that also applies to the quiz this afternoon."

"I wish you hadn't brought it up." She made a face at him. "I was just at the point of letting myself believe I could take it without doing any more studying. Now I suppose I'll have to get back to it."

"I know *I* need more work. You're good company." He turned on the computer. They sat down together. He looked at her sidelong. "Maybe you should pick out another spectacle instead."

"Ha! Not with that damn quiz waiting for me—no, don't pout, this is what you deserve for reminding me of it."

"All right," Stavros said, and did get down to studying, disappointed but not really displeased. No matter what she knew about reporters, Andrea also knew what came first. That counted for more.

"Thank you for inviting me here today," Paulina Koch said. "It is always a privilege to provide information to this distinguished Assembly subcommittee."

"Thank you for agreeing to appear before us on such short notice, Chairman Koch," Assemblyman Valleix replied.

—Here you are, snooping again. —Damn straight, and maybe we'll nail you this time, too. The Chairman knew the real meaning of the opening amenities perfectly well. So did Valleix. The Purist was a blockhead, but not, she thought, that big a blockhead.

He asked, "Have you any opening statement you care to read into the record?"

"Perhaps it would be better merely to respond to questions." Paulina Koch smoothed an imaginary wrinkle from the collar of her gray tunic.

"Very well. I will make the first question as general as I can, then, and ask how you respond to the allegations raised on Hyperion and other planets concerning Survey Service cultural interference on the pretechnological world Bilbeis IV."

"To that, sir, I have only the reply I already gave in public: that the report which—as you properly said—is *alleged* to deal with Bilbeis IV is not a product of Survey Service personnel and was produced to denigrate and cast doubt on the numerous successful activities of the Service."

Assemblyman Valleix nervously licked his lips. He remembered the last trap the Survey Service Chairman had set for him. If she blew him out of the water again here, not only would he look like a fool with elections coming up, but no one would dare tackle the Survey Service again for the next generation and a half.

His voice wobbled as he asked, "Have you conducted a thorough investigation through Service records to ascertain the truth of the statement you have just made?"

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"Indeed we have, sir. Nothing in our data files gives any support whatever to the wild claims first raised on Hyperion and then copied by sensation-seekers elsewhere. From that, one must conclude the supposed report to be fraudulent. The Survey Service is also conducting an investigation on Hyperion to attempt to discover the source of these scurrilous rumors."

"Yes, I can well believe that," Valleix said dryly. Paulina Koch sat quietly, waiting for his next question. If she heard his sarcasm—and he was certain she did—she never let on. She was a cool one, all right, he thought with reluctant respect. He went on, "Perhaps computer specialists from outside the Service will have more luck accessing relevant documents than your own people."

"I hope they do," Paulina Koch said. "Our records are of course at their disposal." She was the picture of the perfect witness, polite, attentive, with any fact Valleix wanted at her fingertips.

He fought down the impulse to sigh. If anything ever had been in the Survey Service files, it was not there now, or the Chairman would never risk its being exposed. Still, he was slightly heartened. She had not flattened him by, say, producing a report on Bilbeis IV that showed everything normal there. Maybe she could not.

He said, "There remains the discrepancy between the arrival date of the *Jêng Ho* as first taken from Survey Service records by, ah"—he paused to check his tickler screen—"by Hyperion Newsnet and that later offered as correct by your organization. Such alteration would seem to support the charge that information is being suppressed."

"Not, I would hope, sir, in the absence of any and all other data. Electronics are fallible, as has been made evident on several painful occasions in the history of the Federacy."

"That is true, Chairman Koch. Sometimes I think we rely too much on electronics. You would not take it amiss, then, if we were to summon some of the crewmembers of the *Jêng Ho* from, ah"—he glanced down at the note screen again—"Topanga, so they can testify as to what they witnessed on Bilbeis IV? Surely their ship will be in by this time?"

"I would think so, sir. No, of course I have no objection to such a course. By all means do whatever you can to uncover the truth here. That is also what we are trying to do, for the sake of our own good name. The wild claims this report makes are wholly inconsistent with the principles upon which we are conducting our operation."

"Thank you, Madam Chairman. I shall instruct the clerk of the subcommittee to issue and serve the appropriate subpoenas." This time Assemblyman Valleix did sigh. If the Chairman was so eager to let these people appear, odds were they'd back her up. Valleix turned to the head of the subcommittee. "I have no further questions of the witness at this time."

"Very well. Assemblywoman O'Kelly, you may proceed."

Stavros opened the door, stepped back in surprise. "Hello! Come in."

"Thank you." Van Shui Pong had not phoned ahead. For that matter, he

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had not been back to the dormitory since the day he first introduced himself to Stavros. He nodded to Andrea, who was eating a candied orange. "Perhaps you and Stavros would like to go for a walk with me. The campus is a pleasant place; I don't get here often enough."

"A walk?" Stavros echoed foolishly. "It's close to midnight."

Van only waited. Andrea stood up and threw on her cloak. Muttering, Stavros got his mantle out of the closet, closed the neck clasp. He and Andrea followed Van to the elevator.

The night was just this side of chilly. The air had a cool green smell, different from the way it smelled during the day. A few lights glowed in distant labs and offices. Still, the path the three of them walked was to the eye merely a pale snake coiling across dark lawns.

After a while, Van stopped. Stavros could hear the silence between the trills of Terran insects and Hyperion's own small night creatures. Van said, "I've finally managed to track down the crew of the *Jêng Ho*."

"Have you? That's wonderful!" Stavros exclaimed. "Will they back their report?"

Andrea, though, found another question: "Why did you bring us out here to tell us that?" Even before Van answered, that damped Stavros's first rush of excitement.

The reporter nodded somberly. "You begin to understand. Here I can hope, at least, that we are not overheard. I don't dare be so optimistic about your rooms any more, Stavros."

The grad student took a moment to find a name for what he heard in Van's voice. "You're afraid."

"Yes, I am. You see, the *Jêng Ho*'s crew was aboard the *Clark County*." When neither Stavros nor Andrea reacted, the newsman snorted in irritation. "Why do we go to so much trouble getting the news out when no one pays any attention to us? The *Clark County* is the ship that crashed on Carson Planet not so long ago. Something over three hundred people died, including all of the crew members of the *Jêng Ho*."

"That proves the Survey Service is lying through its teeth," Stavros burst out. "If the *Jêng Ho* didn't get back till the day Paulina Koch claimed, how could the crew have gone on their junket and had that accident?"

"If it was an accident," Andrea said slowly.

Stavros felt the air rush out of him as if he had been kicked in the belly. "That makes too much sense for me to like," he said at last.

"And for me too," Van said. "I was going to point it out to you people if you didn't come up with it for yourselves. Too many coincidences add up to scaring me a lot—if we keep pushing at this thing, I have a bad feeling we'll end up the same way your professor Fogelman and sixteen Survey Service crewfolk ended up. I'm sorry, but I've had enough. I wish you well if you want to go on, but you'll have to do it without me. My phone won't accept your calls any more; if I hadn't been afraid it was tapped, I'd have called you to tell you this. As is, we have a decent chance of talking in private here. Now I've talked, and now I'm going to leave."

"But, but—" Stavros spluttered to a halt, tried again. "But now we can prove the Service really is trying to sup-

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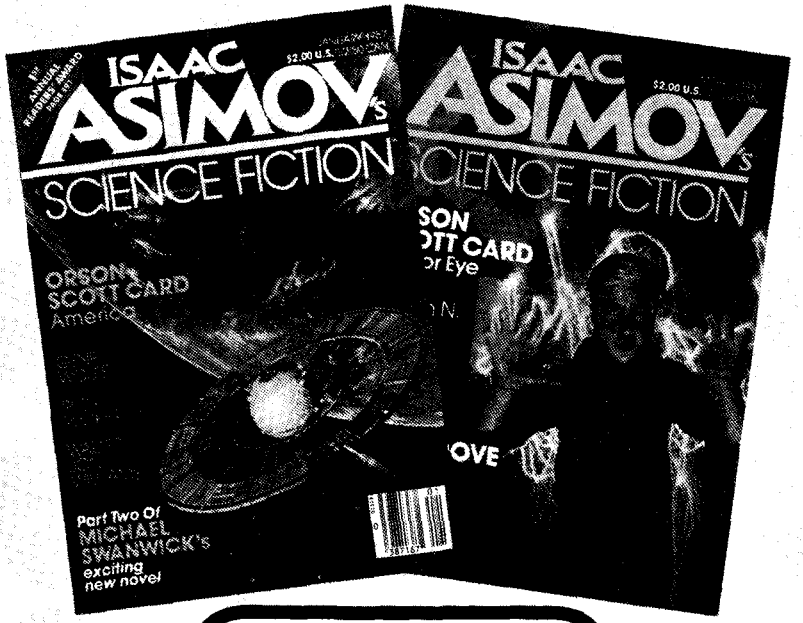

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press the report on Bilbeis IV. They lied about when the *Jêng Ho* came back, which means the report I have is genuine. It can't mean anything else."

"No, it means one thing more, Stavros. It means the Service isn't just trying to suppress that report—they're doing it. Ask Fogelman, ask the *Jêng Ho*'s crew, ask three hundred other people on the *Clark County* if you doubt me . . . and if you can. I don't need to ask them: I get the message loud and clear."

Andrea said, "How can you back away from this, knowing what you know?" She did not sound angry; if she had, Van would never have answered her. She only sounded bewildered.

Even as it was, the newsman's reply came slowly and grudgingly. "I thought of all that. I've done nothing but think about it the last couple of days. I've lived with my ideals a good many years now. I've always believed in them, but I've found that if I have to choose between keeping my ideals and keeping alive, I'd sooner live. If I go on with this I don't think I will, and if you go on, I don't think you will either."

"But—" Stavros had been saying that ever since they got out into the quiet dark. He felt stupid, but nothing better came to mind.

"No more buts." Van thumped him on the shoulder, reached to take Andrea's hand but dropped his own when she drew back from him. He grimaced. "Goodbye, then." He strode quickly away.

Stavros stared after him, still trying hard not to believe any of what he'd heard. It sank in despite his best efforts. Van's fear was too real to ignore. So was the *Clark County*. "Three hundred some odd people dead," Stavros whispered. "They are playing for keeps."

"Three hundred some odd innocent people dead, on top of Bilbeis IV itself," Andrea said. "Can we let the Survey Service come away untouched after that?"

"Can we stop them?" Stavros did not feel anything like a hero. The longer he stood outside in the blackness, the better he understood Van Shui Pong.

"We have to," Andrea said indignantly.

"Yes, I suppose we do." Giving up now would mean not calling the Survey Service to account for what it did on a good many thousand pre-Federacy worlds, to say nothing of leaving Paulina Koch in charge of that immense and powerful bureaucracy. But Stavros remembered Andrea's warning after she first saw the report on Bilbeis IV. Then he'd had to hesitate before he even took her seriously. Now she was proving only too good a prophet.

His shiver had nothing to do with the chill of the night.

"The problem appears to be contained within manageable limits," Paulina Koch remarked.

"Yes," Hovannis said. "The loss of the *Clark County* was a great tragedy."

"So it was." The Chairman did not ask her External Affairs Director any questions about that. Whatever he knew, he knew. She hoped it was nothing, but she did not want to find out.

Certainly, the Assembly probe had crashed with the *Clark County*. No one was in a position to contradict Survey Service testimony after that. A few peo-

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ple, Paulina Koch's informants said, made snide comments on how convenient the crash was for her. No one made them to her face, or on the record.

"Is there anything more?" she asked Hovannis.

"Nothing to speak of, PK. Hyperion Newsnet is finally calming down, as you may have noticed. I understand some small fuss or other is still going on there, but I expect that will fade out too."

"All right." Paulina Koch dismissed Hovannis. She wondered how long she would be able to dismiss him and be sure he would obey. He knew too much, had done too much to help her cement her own position. One day, she thought, she might have to make certain he would stay silent. That carried its own risks. Roupen Hovannis was no one's innocent. Floppies could point an accusing finger even after a man was gone.

The Chairman's lips creased in a bitter smile. If she had not known of the power dead men carried, Bilbeis IV would have taught her all about it. That damned anthropologist had been dead more than fourteen hundred years, but the trouble his meddling caused looked to be as immortal as the queen whose cancer he'd cured.

The smile disappeared. Paulina Koch drilled herself never to reveal too much. Behind the impassive mask she cultivated, though, her mind was still racing. More and more these days she thought she should have let the report on Bilbeis IV go public, and simply taken whatever heat descended on her and on the Service because of it.

Too late for that now. If it had not been too late from the moment the report vanished from the Service file, it became so with the death of—what was his name?—Fogelman. She had managed to make herself believe that was necessary to protect the Survey Service for which she had worked so long and hard.

About the *Clark County* she did not want to think at all. Most of the people aboard the *Clark County* had never heard of Bilbeis IV. Well, they never would now, that was certain. And now she was not just protecting the Service, but herself as well. Rehabilitation—she shuddered at a euphemism grimmer than any in the Survey Service lexicon—would be the least she could hope for if the truth came out now.

No way but forward, then. She pushed the whole business aside, as she had so often before, and went on with the job of administering the Service.

"Thank you." Andrea switched off the phone, savagely flung it against the back of one of Stavros's chairs. "Oh, that bastard!"

"Another one?" Stavros sighed. Both of them had grown very familiar with a stock set of responses over the last few days.

"She might as well have been a recording," Andrea said glumly. " 'I am sorry. You may even be right, but people are bored with Bilbeis IV and what you have is not exciting enough to make them sit up and take notice again.' At least she didn't tell me it wasn't sexy enough to get on the news, the way some of them have."

"Trouble is, they're right. How do you make people care about eighteen days? You can't show them a picture

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of eighteen missing days, the way you can of eighteen missing starships."

"But when they show the Survey Service is lying—"

"The way it looks, not everyone cares about that," Stavros said. "Do you know what one of the people I talked to told me? Something to the effect that of course government agencies lie, and the job of the news teams was to catch them lying at something interesting. Without the *Jêng Ho*'s crew, we just can't do that."

Andrea set her hands on her hips. "You'd think the crash of the *Clark County* would wake them up."

"I know, I know." Stavros banged his fist against his thigh in frustration. "Trouble is, we shouted murder at the Survey Service over professor Fogelman and weren't able to make it stick. Now it doesn't matter how loud we yell it, because no one's willing to pay attention any more."

"Does that mean you want to give up?" Andrea asked dangerously.

"No, of course not." Stavros hoped he sounded indignant. He very much wanted the Service brought to account for all it had done. He was no longer confident that would happen, but he wanted it all the same. And even more, he wanted not to lose Andrea. If he quarreled with her over this, he was sure he would. So, suppressing his misgivings, he went on, "We'll keep trying."

"All right, then. Who's next on our list?"

He recalled it on the computer. "*The Unvarnished Truth.*"

"I've seen their output once or twice." Andrea looked unhappy. "Have we really sunk so low?" She retrieved the phone from where it leaned drunkenly against a wall, punched buttons. "Hello, this is Andrea Dubois. Could you please put me through to your managing editor? Yes, I'll wait . . . Hello? This is Andrea Dubois. I have important new information on the Bilbeis IV scandal—"

The discreet individual wanted to take those two idealistic idiots off to one side and pound some sense into them. Newsmen were notorious fools, but Van Shui Pong got the message once it was shouted loud enough. He might not have been able to put together two and two, but he could add one and three hundred-odd. Hyperion Newsnet was very quiet these days.

Sometimes the discreet individual thought about picking up some extra money blackmailing the Survey Service—after so long on this job, he could not escape realizing who was paying him. The Service would give him what he wanted, he thought; he had already shown he could keep his mouth shut.

But he kept on taking his fees and not pushing for more. The *Clark County* told him a story, too: he decided he did not want the Survey Service reminded of how much he knew. Sometimes being discreet and seeming slightly stupid looked a lot alike.

He wished the graduate students could understand that, and understand that he was just the cutting edge of what they were up against. It wasn't going to happen, though. All their training went against it. They had to seem smart in class, and so they thought they had to be smart all the time.

That, he knew, wasn't so smart itself.

* * *

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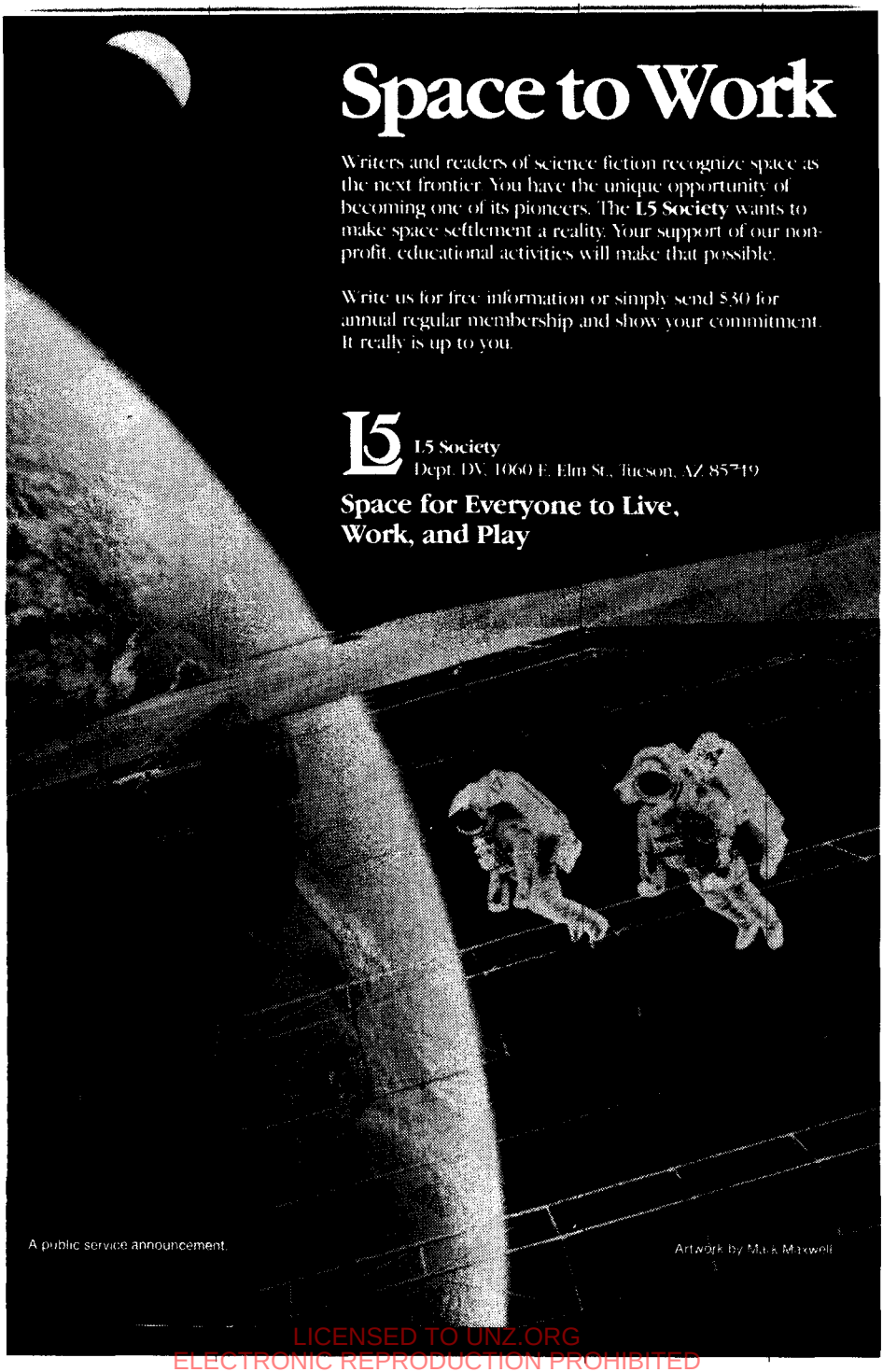
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One evening a week, Stavros had a class Andrea did not. Though his Anglic was more than fluent and he also wrote it well, he kept working to improve. Being with Andrea so much helped show him how much better he could do, and so he endured the composition course for the sake of the tricks it taught him. Andrea felt the class was helping his writing.

Today the instructor had been talking about adverbs and how to use them: in small doses, Stavros gathered. The instructor claimed the real skill lay in picking the right verb in the first place rather than in adjusting the meaning of one not so right with modifiers. Remembering some of his own papers, he decided that sounded reasonable. He wondered what Andrea would think of it.

"I'm back," he called as he opened the door to his rooms.

No one answered. His dark brows drew together. He and Andrea did not spend all their nights together, but she'd been here when he left and he hadn't known she was going anywhere. He stepped toward the computer, wondering if she'd left a message.

He stumbled over a shoe and almost fell. That forced him to notice what a mess the place was. Stavros was not a neat housekeeper. Few men had occasion to learn such skills on New Thessaly. But nearly drowning in junk made him pay some attention to keeping things tidy, and wanting to keep Andrea happy had done more.

Leaving the place in such disarray was not like her, but Stavros did not think anything of it until he saw his icons were missing. He had brought the hand-painted images of Christ, the Virgin, and John the Baptist with him from home. Though he was no longer devoutly Orthodox, the icons still served to remind him of New Thessaly: he felt good every time he glanced over at them. Now they were gone.

They were not the best work New Thessaly had to offer, but here on Hyperion, where their like was rare, they would be worth a fair amount. Stavros swore and dashed into the bedroom. He kept the rest of his valuables in a drawer under the bed.

Andrea's body sprawled across the mattress. For a moment, not understanding, Stavros thought she was asleep. Then he saw the blood under her head. He moaned, something he had heard of but never remembered doing.

The drawer under the bed was open. So was the little strongbox inside. Stavros noted all that peripherally, though later his recall of it would be perfect: disaster has a way of printing tiny details forever on the brain.

He stumbled forward to take Andrea's wrist, thinking there might be some hope she still lived. Her flesh was cool; it had begun to stiffen. He knew what death felt like. He staggered into the bathroom and was sick.

Mechanically, he rinsed his mouth. Tears streamed down his face. He did not realize he was crying until he went to pick up the phone and found he could not read the buttons.

The phone was next to the computer, where Andrea must have put it after her last useless call to the newsies. Stavros recalled the number for the police and had punched in the first three digits be-

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fore he paused, scowling, and put the handset down again.

What had happened in his room bore every sign of being a random break-in and killing. But then, professor Fogelman's death had looked the same way. Stavros turned on his computer. He could not access any of his files. They were not there to access—they were gone. If he hadn't made a habit of carrying the original floppy with the report on Bilbeis IV around with him, it would have been lost too.

He had not thought he could be more afraid. Now he discovered he was wrong. A random burglar would not have bothered lobotomizing his computer. Someone from the Survey Service would. Van Shui Pong knew what to worry about.

Stavros started to call the police again, stopped for a second time. He suspected they might be more interested in him as a murderer than as the victim of a crime. He knew logically that he could prove his whereabouts when Andrea had been killed. Something old and watchful in him, though, warned that the police might not be thinking logically, not if the Service put enough quiet pressure on them. He thought the Service might do just that. After the *Clark County,* he could not afford to think otherwise.

He did not call the police. He packed a tote instead, the kind that looked as though it might be full of anything. He slung it over his shoulder, locked the door behind him. With luck, he had a couple of days to do whatever needed doing. Without it, he'd be scooped up before daybreak, and his running away would not look good.

He headed for the library to kill the rest of the night; he had to fight down hysterical laughter when the phrase occurred to him. The university library held several thousand volumes, and was easily the largest of the three or four on Hyperion. It was the main storehouse for works that reached the planet in hard copy format and had not yet been entered into the data retrieval system.

Several archeological journals arrived in hard copy; the librarians were used to Stavros dashing in at any hour of the day or night. He only managed one-word replies to their greetings, but hoped he managed to seem merely busy, not distraught. He must have succeeded; they went about their business without looking at him twice.

The cool silent isolation, the musty smell of old paper, the rows of study carrels took him back to the ancient days when all scholarship work took place in rooms of this sort. He dug a couple of periodicals off the shelf, went to the most distant carrel, and pretended to start reading.

He could not keep the pretense up long. He buried his face in his hands. His shoulders shook, but he wept very quietly. No one came over to see if anything was wrong. The handful of other people in the library at that hour were all intent on their own concerns.

After a while, exhaustion and reaction combined to waylay Stavros. He fell asleep, still slumped over the desk. That did make the librarians notice him, but only with amusement: they were used to it.

The eastern sky brightened toward dawn.

* * *

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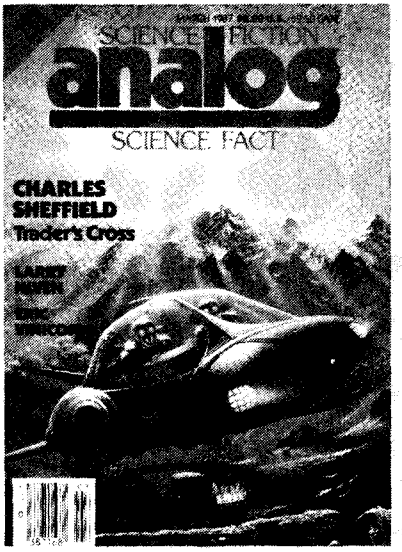

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In theory, seats in the Assembly gallery were first come, first served. In practice, if the Chairman of the Survey Service wanted a seat, she got one. Today she wanted one. She could have had a better, closer view of the appropriations vote from the terminal in her office, but it would not have been the same. Paulina Koch had worked too hard for this victory not to want to enjoy it in person.

To her annoyance, the diehard Purists insisted on a formal rollcall vote. Any dozen Assembly members could do that, but it was an archaic rule hardly invoked once a session. They must have spotted her, she thought, and decided either to make her leave before the vote was done or else keep her in the chamber for hours. She did not intend to give them the satisfaction of leaving, or even of seeming discomfited. She did note their names, for future reference. Maybe they did not realize how well she would be able to repay such scores after the vote was done. If they didn't, they would soon.

And before long, even the Purists must have realized they'd made a mistake. The steady litany of ayes showed how strong the Survey Service was, better than any impersonal display of green lights on the tally board ever could. Even some of the men and women who had demanded the rollcall began to waver at the end. When Assemblyman Valleix abstained, Paulina Koch needed all her self-control to keep from laughing out loud.

After the last vote was cast and the appropriation overwhelmingly secured, the Chairman allowed herself to think of other things. Bilbeis IV was never far from her mind at such times. She knew the silence she had imposed was only a temporary solution. Eventually calls for a new examination of the planet would come. She wondered if she could quell them.

She did not think so. There had been enough quelling already. Yes, it had worked, but one reason it had was that it did not call too much attention to itself. More along the same lines would.

What then? The next best thing to no report on Bilbeis IV—maybe even better than no report on Bilbeis IV, now that she thought of it—would be a report that minimized the cultural interference there. That would give the Purists something to beat their breasts about, without raising their paranoid suspicions the way a clean bill of health would. If she could not put together a tame Survey Service team that would see things her way, she did not deserve to be Chairman.

Thinking of tameness reminded her of Roupen Hovannis. The External Affairs Director was not nearly tame enough to suit her. Unfortunately, however, he was too useful to dispense with. So long as his interests and hers ran in the same direction, he was no problem. The tricky part would be keeping their interests aligned without giving him the idea that he could make her dance to his tune.

She had been a manager for a lot of years now. The precise nature of the problem Hovannis posed was new to her, but it was not altogether different from others she had faced before. Again, if she couldn't handle it, what was she Chairman for?

Hovannis's henchmen were some-

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thing else again. That discreet individual on Hyperion, for instance, was really too effective to suit her. No, that wasn't quite right. The trouble was, he had been used too often. Anyone with the talent he obviously owned would draw the proper conclusions from his assignments.

She did not like that. The discreet individual was on a tether too long and loose for her to be able to control him the way she could the External Affairs Director. He might decide to make a nuisance of himself. Paulina Koch did not approve of nuisances.

The chatter of librarians changing shifts was low-voiced, but enough to wake Stavros. He groaned and stretched. His joints creaked, protesting the contorted position in which he'd slept.

The police had not nailed him yet. That was the only bit of cheer he could extract from the situation. He stood up and stretched again, but still felt old and arthritic.

"Long night?" one of the new librarians asked sympathetically as Stavros shambled toward the exit.

"You have no idea."

The librarian laughed. Stavros did not.

His stomach growled. He started to head for a food machine, then stopped. He would have to go hungry a while longer. The more he used his credit card, the plainer the trail he'd leave. He'd have to use it one more time, but no help for that. He'd have to hope nobody had found Andrea by then.

The university was surrounded by a couple of kilometers of greenery on all sides. Shuttles into New Westwood ran regularly, but no one paid walking students any mind either.

Once he was among the buildings, he had to wait a while longer. For reasons no one remembered any more, banks did not open till halfway through the morning. Stavros needed one of the two human tellers for what he wanted to do. "I'd like to turn my account to cash, sir."

The teller's eyebrows rose. "The entire sum?"

"Yes. I'm afraid there's an emergency in the family—"

The teller let out an audible sniff. People had been talking about phasing out cash since long before the Federacy began. It hadn't happened yet, and wouldn't any time soon. Anonymous money was too convenient to do away with. Yet if someone paid cash these days, the suspicion usually was that he had a good reason to.

Stavros had rarely handled cash before. Holding the crisp paper with its holographic designs sent an atavistic thrill through him, as if he were carrying gold coins. A credit card was mundane by comparison.

"Let me have your thumbprint and signature on the receipt, sir," the teller said sourly.

The discreet individual said a loud, indiscreet word. He had not been sure he would be able to monitor Monemvasios's bank account; banks were even more jealous of their privacy than newsnets, and worked harder to keep it. But for the moment, at least, his trapdoor program was working. He saw the account drop suddenly to zero.

He hadn't thought cashing out would

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occur to Stavros Monemvasios. In the phone calls he'd tapped, Monemvasios had seemed on the tentative side, while his woman friend was brisk and forthright. Mistaking hesitance for stupidity, though, was evidently an error.

And now, using cash, Monemvasios was going to be a real nuisance to keep track of. The discreet individual scratched his head. What would the wretch be up to?

He hadn't gone screaming to the police. The discreet individual would have known about that. He wasn't sure whether to be pleased or disappointed. Like Stavros, he thought there was a fair chance they wouldn't look past their noses. That would have dealt with that very nicely.

With a pocketful of cash, Monemvasios had to be on the run. Where would he go? All he knew of Hyperion was the university and its surroundings. He'd probably try to get offplanet, most likely to his home planet. Hyperion had two spaceports, one of them halfway round the world. A stakeout of the local facility might prove productive.

The discreet individual gathered a few tools of his trade and headed for the spaceport. He left others behind with regret. The spaceport was too public for them. He would have to be more subtle than usual. That did not bother him for long. Minimalism was part of his art too.

Stavros spent part of his wad of cash at a small appliance store down the street from the bank. The clerk who took his money gave him a curious look with his change. "You don't seem to have much use for that," she said.

"It's for a friend," he answered. He was lying. He went into the restroom. When he came out a few minutes later, he was clean-shaven for the first time in a dozen years. His face felt naked. To his own eyes, he seemed quite different, and five years younger. He hoped others would see as much change, and not see *him*.

The next thing was to eat. The first place he happened into served the sort of bland, vaguely greasy fare that would annoy no one, and excite no one very much either. At the moment, Stavros did not care. He wolfed it down. He gulped coffee too; his fitful sleep in the library had not been nearly enough.

He never had learned to like the coffee they brewed on Hyperion—he found it a thin, bitter brew. New Thessaly coffee was almost strong enough to drink with a fork, and full of sugar and heavy cream. Now he did not even grimace at the stuff in the foam cup. He was drinking it for caffeine, not flavor.

He had never bothered—or needed—to notice whether the ground shuttle had a cash slot. If it didn't . . . He set his jaw. The spaceport was a dozen kilometers away, maybe more. Walking would take hours, hours he might not have.

Nothing ventured, nothing gained. He waited on a street corner until the spaceport shuttle came by. The scanner spotted his upraised thumb. The shuttle pulled to a stop in front of him. The doors hissed open. He sprang onto the step, looked anxiously at the control panel.

He felt himself sag in relief. There to the right of the credit card opening was another, smaller one marked "cur-

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rency." He fed in a bill. His change returned a moment later.

As the shuttle purred toward the spaceport, Stavros did some hard thinking. Getting offplanet was one thing, deciding where to go something else again. His first impulse had been to run for home. Now he wondered how good an idea that was. If the police were already looking for him, that outbound line would be one of the first areas they'd cover.

What to do, then? Random flight held no appeal for him—it was too much like giving up. His fist clenched. He wanted to hit back, if he could find a way. But how? If he went to the capital to beard Paulina Koch in her den, he knew the fate he could expect. Fogelman and the *Clark County* and now Andrea had taught him the same lesson they'd given Van Shui Pong. Unlike the newsman, though, he was too stubborn to be scared off.

If the capital was hopeless, Stavros had to find an alternative. He could see grounded starships in the distance when he snapped his fingers. The *Jêng Ho* had sent its report from a world called Topanga. Maybe, just maybe, some of the crew had talked with the locals about it before they set out on the doomed *Clark County*.

Stavros had no idea where in the Federacy Topanga was. There were too many worlds to keep track of, unless one was Isaac Fogelman. And a fat lot of good his gift had done him in the end, Stavros thought.

The shuttle sighed to a stop outside a big terminal building. Stavros shouldered his tote and descended to the concrete. The terminal doors opened for him and the other passengers.

He went to an information outlet, tapped in the name Topanga. It was, he found without surprise, not far from Carson Planet. It had no direct connection with Hyperion, but ships from both worlds touched on Enkidu. Stavros was in luck; a ship outbound for Enkidu lifted off tomorrow. He checked the fare column. Yes, he could afford it.

He walked over to the ticket line. The clerk processing orders frowned a little at the sight of so much cash. "May I see some identification, Mr., ah"—she looked down at her screen for the name Stavros had plucked out of the air—"Mr. Mesropinian?"

Stavros went through his wallet with fingers suddenly frozen. Getting caught using an alias would lead to more questions, questions he could not answer. He shifted his feet, made ready to bolt.

And then he came upon his old ID from New Thessaly. It bore his picture and his name—but that, along with all the rest of the written information on the card, was in Greek. Affecting a nonchalance he did not feel, he put the card on the counter in front of the clerk.

Her frown deepened. "I'm sorry, sir, I can't read this."

"Is your ignorance my fault?" he said as cuttingly as he could.

He saw he'd angered her. "Let me have your luggage there, sir, for the contraband-sniffer," she snapped. But the petty triumph faded from her face when he passed the tote to her without a word of protest. The sniffer's light went green, as Stavros had known it would. The only thing he was smuggling was information, the most deadly

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contraband of all, but one without a smell.

The clerk looked as if she wanted to take things further, but the line was beginning to back up. "What's going on there?" someone called.

"*Is* anything wrong?" Stavros asked, softly this time.

"Well—" The clerk looked again at the all-clear light on the sniffer. "I suppose not." She punched keys with unnecessary violence, handed Stavros his ticket. But she could not resist a parting shot: "I do suggest, sir, that you obtain a more easily verifiable means of identifying yourself."

"I'll see to it," said Stavros, who had several, none of them, though, as valuable to him at this moment as that little incomprehensible piece of plastic.

The spaceport was studded with clocks, both FSY and local time. Twenty-nine hours to go, Stavros saw. He was not out of the woods yet. His main concern was staying inconspicuous. In a crowded spaceport, that shouldn't be too hard, he thought. All he needed to do was stake out a seat and look bored.

The discreet individual was wondering if he'd outsmarted himself. He had hooks into the spaceport information system, of course, but that was like saying he had a knitting-needle lodged in a whale's fluke—he could not cope with the avalanche of data he was getting.

Restricting the incoming feed to travelers who paid cash helped some, but not enough. Too blasted many people came through the spaceport. Only a few of them, though, planned routes that would take them to New Thessaly, or even in the general direction of the planet. The discreet individual had his computer analyze the routing forms of cash customers going that way.

The conclusion became inescapable after a while: none of those people were Stavros Monemvasios. Some were too old, others too female, and still others had papers an amateur could not fake on the spur of the moment.

All of which meant the discreet individual had miscalculated somewhere. He was still certain Monemvasios meant to get off Hyperion—what point to cashing out and then waiting around to be caught? And Monemvasios's home planet seemed the most logical place for him to go.

Logic and truth, however, had at best a nodding acquaintance. The discreet individual always bore that in mind. He also had other things to do than worry about a student on the run. He decided to do some of them, and come back to Monemvasios if inspiration struck.

As with peripheral vision, the mind is often sharper if it looks to one side of a problem. That evening, the discreet individual suddenly sat bolt upright. In guessing Monemvasios would head for New Thessaly, the discreet individual tacitly assumed his quarry would be trying to get away, nothing more.

What if that was wrong? What if Monemvasios was still in the mood to create problems? The discreet individual found that unlikely, but believed in covering his bets. If it was so, where would Monemvasios go?

The discreet individual put the question another way—where offplanet could Monemvasios get backing for his claims? Not from the central bureaucracy of the Survey Service, that was for sure!

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Where had that miserable report come from? After a few minutes of searching through his files, he had the answer.

Then he had to reprogram his computer to examine cash customers en route to Topanga, or rather to Enkidu. When he found a certain S. Mesropinian, he smiled and picked up that attache case. It was time to go back to the spaceport.

The preliminary screening gadgets at the terminal entrance never hiccuped as he walked through. The more sophisticated contraband-sniffers that dealt with passengers' luggage would also have given his case a clean bill of health. Programmers, he thought smugly, did not know everything there was to know.

He queued up to use an information screen. The *Arminius,* the ship outbound for Enkidu, would be departing from subterminal seven—naturally, the one furthest from where he sat. He sighed and climbed onto the slidewalk that would take him there. All he'd need to do then would be to spot Monemvasios/"Mesropinian" and bump him a little. He'd have enough time for a getaway, but in a few minutes it would all be over.

Someone bumped *him* a little. "Beg your pardon," said a slim woman in business attire. She pushed past the discreet individual, adding her own walking speed to the steady roll of the slidewalk. He watched appreciatively; she had a nice backside.

Because she was so brisk, she soon put several people between herself and the discreet individual. Out of sight, out of mind, he thought as she disappeared. He went back to planning the credit-transfer scheme he could finally give full time to once Monemvasios was disposed of.

Waiting kept Stavros on edge. He migrated back and forth between the outgoing passengers's lounge and the cafeteria next to it. He was full to bursting by now, but each trip gave him an excuse for getting up and stretching his legs. That was easier than just sitting in one spot with headphones to drown out the world.

Or it would have been, except that every fifty-meter hike took him past the spaceport security guards. They ignored him, but each time he showed himself to them, he twisted with fear they wouldn't.

He was also, he noted ruefully, using the jakes a good deal.

The discreet individual glanced round the lounge. He saw no one who looked even a little like Monemvasios. Shrugging, he sat down to wait. He did not think the man he hunted could be far away. He shivered. They had the air conditioning up very high in here.

He stiffened. Was that skinny fellow walking out of the head the one? No, too short; no matter how desperate a man was, he could not shed ten centimeters.

There was Monemvasios, coming from the lunchroom! All he'd done was shave, but that took years off his face; the discreet individual's first glance had slid right past him. Sometimes the least disguise was best.

The discreet individual got up, or started to. For some reason, his legs did not want to work. He put his hands on

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the arms of his chair and pushed himself upright.

He shivered again. It was awfully cold in here, he thought. He took a step toward Monemvasios, staggered, caught himself. He took another step. This time he could not keep himself from sliding bonelessly to the floor.

His last conscious thought was that the woman who'd poisoned him really did have a fine behind. He never felt his head hit the ground.

Someone screamed. Security guards rushed into the lounge. Stavros almost jumped out of his skin. His body took two involuntary, half-running steps before he realized he was not the target of the guards' attention.

They gathered instead round a man who had crumpled on the thin carpeting. All Stavros could see of him was his shoes, for the guards screened his upper body from view. One guard was frantically massaging his chest, while another stooped to give mouth-to-mouth resuscitation.

The spaceport doctor came running in a couple of minutes later. She immediately pushed one of the security guards out of the way and got to work. Soon she rose again, her mouth twisted in a grimace of frustration.

Stavros reflexively crossed himself. At the doctor's direction, a couple of guards lifted the dead man and carried him away. The usual babble of the lounge was stilled. Background music, ignored a moment before, seemed loud and intrusive. Shivering as if he had taken a sudden chill, Stavros found a seat and waited for the *Arminius* to arrive.

* * *

The report was oblique, talking about a personnel transfer being satisfactorily expedited. Anyone who saw it on Paulina Koch's screen might have wondered why the Chairman had to deal with it herself, but would have forgotten about it before he was out of her office.

The Chairman cleared the screen. Another loose end taken care of, she thought, and this time before any trouble resulted. Hovannis's discreet individual would never be anything but circumspect now. Better still, she had used her own contacts to arrange that, not gone through the External Affairs Director. One day she might find it useful to have independent resources in that area.

She frowned, but only briefly. Bureaucratic language and patterns of thought made it easy for her to take an impersonal view of the operations she ordered carried out. She had trouble imagining people dead, but could clearly see how her position and her agency had been protected by what she'd done.

And they had been protected. The appropriation was safe, the Purists discredited or ashamed of their own policies. The latest polls showed public approval of the Survey Service near an all-time high.

Now it was payback time. With her new power, she could make life very uncomfortable for the gadflies who'd been buzzing round the Service for years. Lately they'd thought they were vultures, come to pick her bones. It was time to remind them they were still small enough to swat.

What a delightful prospect, she thought.

* * *

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Stavros had a bad moment boarding the *Arminius*. The steward who fed his ticket into the ship's computer nodded to him and said, "Glad to be aboard?"

"You'd better believe it!" he said fervently.

"Thought as much. You look like you're about three steps ahead of the executioner." The steward laughed at his own joke. Stavros managed a strained chuckle. The steward stepped aside and waved him into the ship.

Even after he was in his cabin, he did not feel altogether safe. The Hyperion police could still take him off the ship. If they came after him now, in fact, he could not even run. His stomach churned. He lay on the bunk and tried to relax. He couldn't. Pacing up and down in the narrow space between the bunk and the bulkhead helped more.

Because he was pacing, he never felt the *Arminius* lift off. He had to check his watch to realize he was in space. He had been running on nerves too long. As soon as he understood he was safe, at least for a while, he flopped to the bunk like a marionette whose puppeteer has dropped the strings.

"A chance," he said out loud. "A chance." Somewhere on Topanga, someone might have heard of the report on Bilbeis IV. And if someone had, he might yet call the Survey Service to account for Andrea (action had made him bottle up that hurt, but it came flooding back now full force), for professor Fogelman, for the crew of the *Jêng Ho*, and for all the poor people who just happened to board the wrong starship at the wrong time.

The Service was huge and powerful, but it was not, must not be, beyond the reach of law. The Chairman had to be shown she and hers were not too big to swat.

What a delightful prospect, Stavros thought. ■

CONTINUED IN NEXT ISSUE

NOTE IN COMPARATIVE LINGUISTICS

●Die infolge der Zeitverschiebungen bei Flügen mit Dusenmaschinen auftretenden Müdigkeitserscheinungen (German)
= jet lag (English)

From a multilingual informational booklet for Qantas Airways passengers

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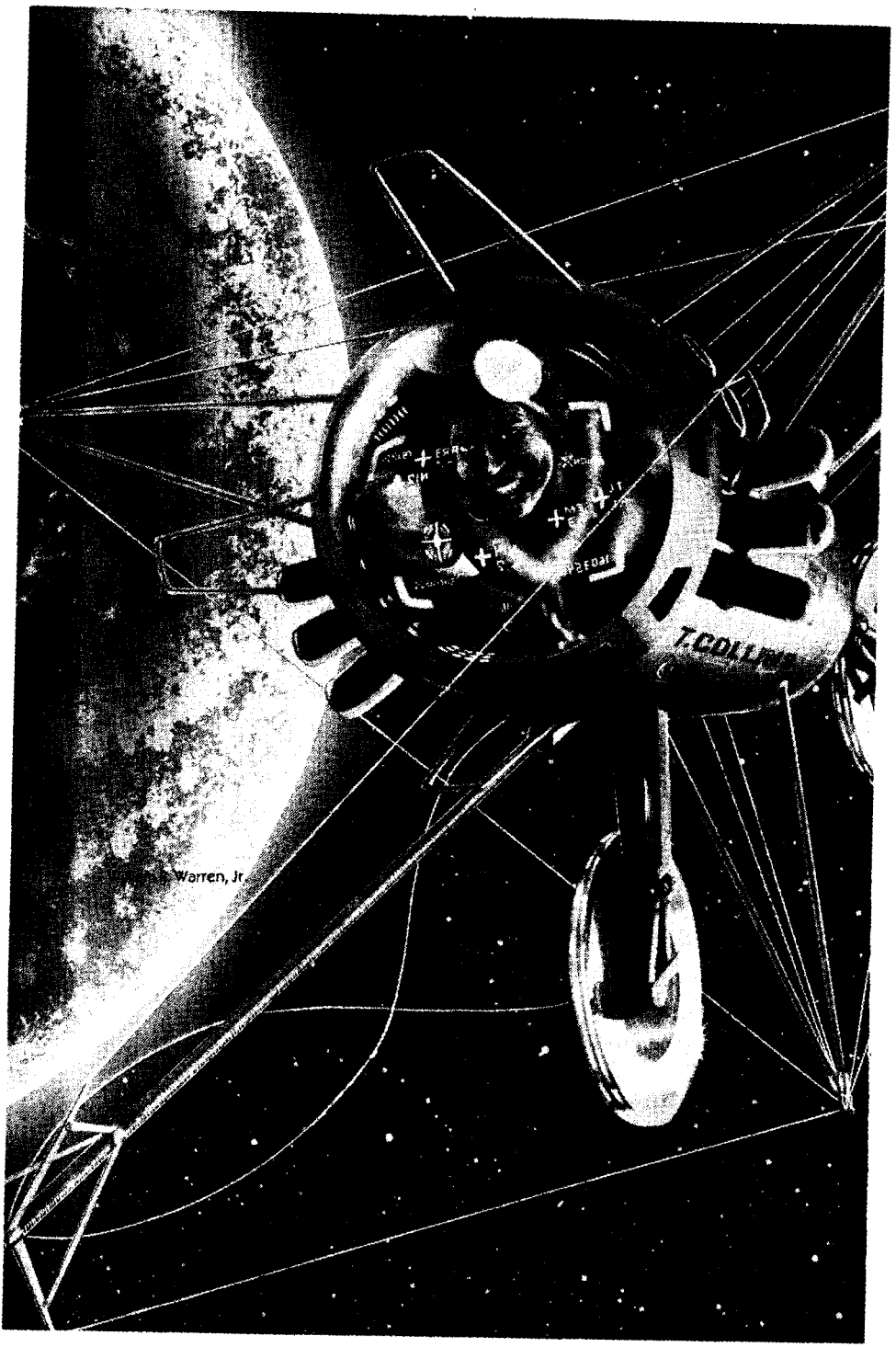

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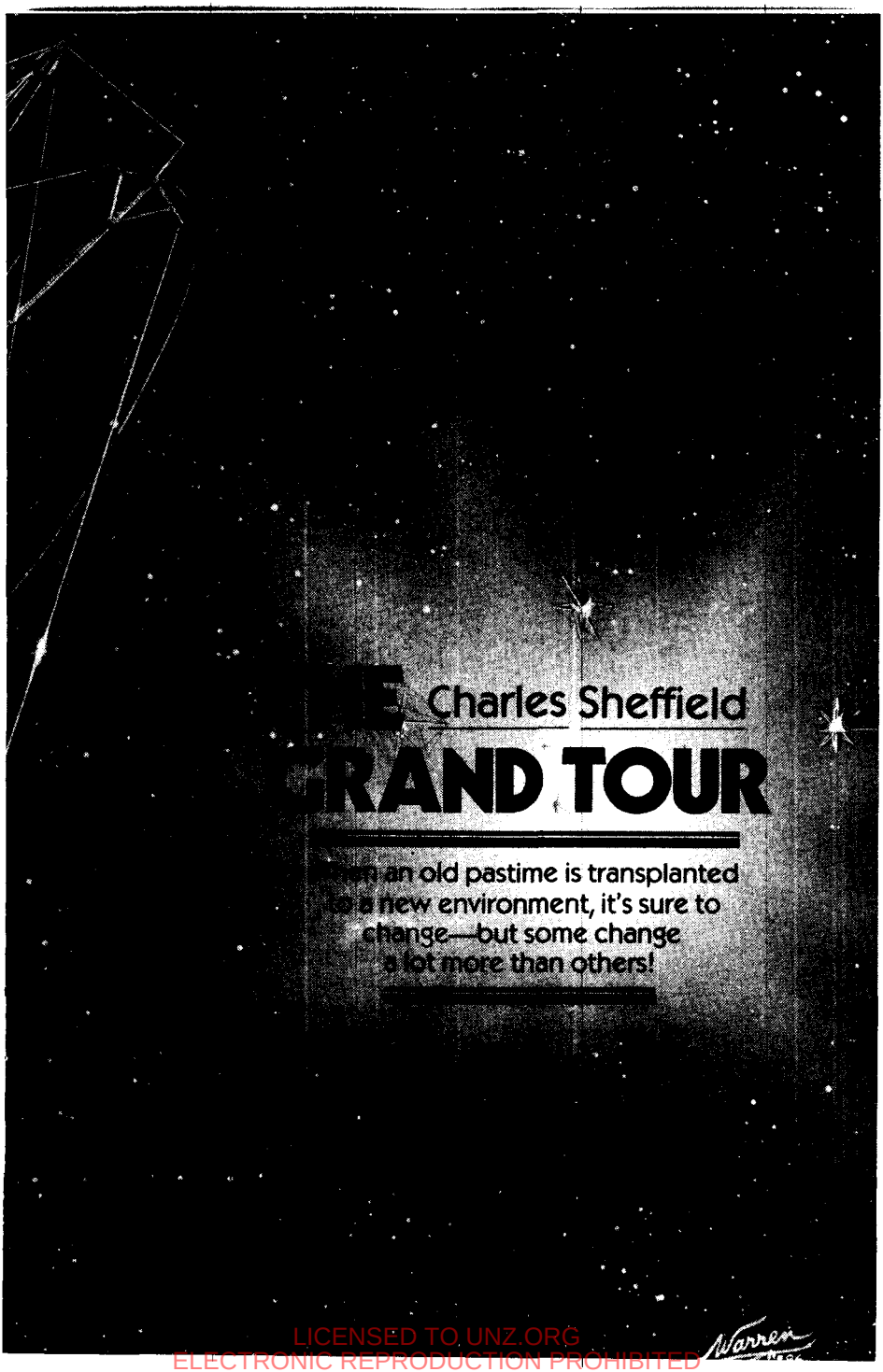
Charles Sheffield
GRAND TOUR
When an old pastime is transplanted to a new environment, it's sure to change—but some change a lot more than others!
Warren

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Tomas Lili had won the Stage, square if not fair, and now he was wearing the biggest, sweatiest grin you have ever seen. Tomorrow he would also wear the yellow jersey on the next-to-last Stage of the Tour.

Ernie Muldoon had come second. In one monstrous last effort of deceleration, I had almost squeaked in front of him at the docking, and hit the buffer right on the maximum allowable speed of five kilometers an hour. We had been given the same time, and now we were collapsed over our handlebars. I couldn't tell about Ernie, but I felt as though I were dying. For the last two hours I had been pedaling with a growing cramp in my left thigh, and for the final ten minutes it was as though I had been working the whole bike one-legged.

After five minutes rest I had recovered enough to move and speak. I unbuckled my harness, cracked the seals, and climbed slowly out of my bike. As usual at the end of a Stage, my legs felt as though they had never been designed for walking. I did a couple of deep knee-bends in the half-*g* field, then straightened up and staggered over to Muldoon. He had also flipped back the top of his bike and was slowly levering himself free.

"Tomas was lucky," I said. "And he cheated!"

Muldoon looked at me with eyes sunk back in his head. He was even more dehydrated than I was. "Old Persian proverb," he said. "Luck is infatuated with the efficient."

"You don't think he cheated?"

"No. And he wasn't lucky, he was smart. He bent the rules, but he can't get called on it. Therefore, he didn't cheat. He was just a bit smarter than the rest of us. Admit it, Trace, you'd have done it too if you'd thought of it."

"Maybe."

"Maybe, schmaybe. Come on. I've been cramped in this bike for too long. Let's beat the crowd to the showers."

He was right, the others were streaming in now, one every few seconds. As we left the docking area a whole bunch zoomed in together in practically a blanket finish. I saw five riders from Adidas, so close I was sure they'd been slipstreaming for a sixth member of their team. That *was* outside the rules, and they were bound to be caught. Five years ago, slipstreaming had been worth doing. Today, it was marginal. The teams did it anyway—because the man who benefited from the slipstreaming was not the one doing anything illegal. The rider who had given the momentum boost would be disqualified, but that would be some no-hoper in the team. Illogical? Sure. The Tour had a crazy set of rules in the first place, and as more and more riders became part of the big teams, the rules became harder to apply. Ernie Muldoon and I were two of the last independents racing the Grand Tour. Ernie, because he was famous before the team idea caught on; me, because I was stubborn enough to want to win on my own.

Tomas was already sitting in the cafeteria as we walked through it, surrounded by the microphones and cameras. He was enjoying himself. I felt angry for a moment, then decided that it was fair enough. We waved to the media and went on to the showers. Let Tomas have his day of glory. He was so far down in the overall ratings that

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there was no way he could be the outright Tour du Système winner, even if he won tomorrow's and the final Stages by big margins.

Ernie Muldoon thought that the overall Grand Tour winner was going to be old and wily Ernest Muldoon, who had already won the Tour du Système an unprecedented five times; and I thought it was going to be me, Tracy Collins, already identified in the media coverage as the Young Challenger; or maybe, as Ernest put it, the Young Pretender. Which made *him,* as I pointed out, the Old Pretender.

I had modeled my whole approach to the Tour on Ernie Muldoon, and now it was paying off. This was only my third year, but unless I were disqualified I was certain to be in the top five. My cumulative time for all the Stages actually placed me in the top three, but I hate to count them little chickens too soon.

The shower facilities were as crummy as we've grown to expect. You've got one of the premier athletic events of the Solar System, with coverage Earth-wide and Moon-wide, and still the showers at the end of each Stage are primitive. No blown air, no suction, no spin. All you get are soap, not-warm-enough water, drying-cloths. It must be because we don't attract top video coverage. People are interested in us, but what sort of TV program can you build out of an event where each Stage runs anything up to thirty-six hours, and the competitors are just seen as little dots for most of the time? Maybe what the media need are a few deaths to spice things up, but so far the Tour has been lucky (or unlucky) that way.

Muldoon slapped me on the back as we were coming out of the shower area. "Three quarts of beer, three quarts of milk, thirty ounces of rare beef, and half a dozen potatoes from the original Owld Sod, and you'll not even notice that leg of yours. Are you with me, lad?"

"I'm with you—but not this minute. Don't you want to get a weather report first, for tomorrow?"

"A quick look, now. But I doubt if we'll see anything special. The wind forecasts for tomorrow have all been quiet. It's my bet we'll see stronger winds for the final Stage. Maybe a big flare-up."

Muldoon was casual, but he didn't really fool me. He had told me, a dozen times, that the solar wind forecast was the most important piece of a rider's knowledge—more relevant than local gravity anomalies or super-accurate trajectory calculations. We went over to the weather center and looked at the forty-eight hour forecast. It was pretty calm. Unless there were a sudden and dramatic change, all the riders could get away with minimal radiation shielding.

That wasn't always the case. Two years ago, the second half of the Tour had taken place when there was a massive solar flare. The solar wind of energetic charged particles had been up by a factor of a hundred, and every rider added another two hundred kilos of radiation shielding. If you think that doesn't make a man groan, when every ounce of shielding has to be carried around with you like a snail carrying its shell—well, then you've never ridden the Tour.

Of course, you don't *have* to carry the shielding. That's a rider's choice.

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Four years ago, on the eleventh Stage of the Tour, Crazy-legs Gerhart had done his own calculation of flare activity, and decided that the radiation level would drop nearly to zero a few minutes after the Stage began. When everybody else crawled away from Stage-start loaded down with extra shielding, Crazy-legs zoomed off with a minimal load. He won the Stage by over two hours, but he just about glowed in the dark. The wind level hadn't become low at all. He docked so hot with radiation that no one wanted to touch him, and he was penalized a hundred and fifty minutes for exceeding the permissible dosage per Stage by ninety-two rads. Worse than that, they dumped him in the hospital to flush him out. He missed the rest of the Tour.

Every rider had his own cookbook method for guessing the optimal shielding load, just as everyone had his own private trajectory program and his own preferred way of pacing the race. There were as many methods as there were riders in the Tour.

Muldoon and I made notes of the wind—we'd check again, last thing at night—and then went back to the cafeteria. A few of the media people were still there. Without looking as though we were avoiding them, we loaded our trays and went off to a quiet corner. We didn't want the Newsies tonight. The next-to-last Stage was coming up tomorrow morning, and it was a toughie. We had to ride nearly twenty-five thousand kilometers, dropping in from synchronous station, where we had docked today, to the big Sports Central station in six-hour orbit.

Some people complain because we call it the 'Tour du Système' when the only part of the Solar System we travel is Earth-Moon space. But they've never ridden the Tour. When you have, the six-hundred-thousand kilometer course seems quite long enough. And the standards of competition get tougher every year. All the original Stage records have been broken, then broken again. In a few year's time it will be a million-kilometer Tour, and then we'll zip way out past the Moon before we start the inbound Stages.

Muldoon and I stuffed ourselves with food and drink—you can't overfeed a Tour rider, no matter what you give him—then went off quietly to bed. Two more days, I told myself; then I'll raise more Hell than the Devil's salvage party.

Next morning my first worry was my left thigh. It felt fine—as it ought to, I'd spent an hour last night rubbing a foul green embrocation into the muscles. I dressed and headed for breakfast, wanting to beat the rush again.

"Well, Tracy, me boyo." It was Muldoon, appearing out of nowhere and walking by my side. "An' are you still thinking ye have the Divil's own chanst of beating me?"

He can speak English as well as I can, but when he senses there are media people around he turns into the most dreadful blarney-waffling stage-Irishman you could find.

"Easily," I nudged him in the ribs. "You're a tough man, Muldoon, but your time has come. The bells will be pealing out this time for handsome young Tracy Collins, overall winner of the Grand Tour du Système." (So

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maybe I respond to the media, too; I sounded confident, but Muldoon couldn't see my fingers, crossed on the side away from him.)

"Not while there's breath in this breast, me boy," he said. "An' 'tis time we was over an' havin' a word here with the grand Machiavellian Stage winner himself."

Muldoon stopped by Tomas Lili's table, where a couple of press who must have missed the Stage winner the previous night were sitting and interviewing. "Nice work, Tomas me boy," Muldoon said, patting the yellow jersey. "An' where'd you be getting the idea of doin' that what yer did?"

A couple of media people switched their recorders back on. Tomas shrugged. "From you, Ernesto, where we all get our ideas. You were the one who decided that it was easier—and legal—to switch the ion drive around on the bike at mid-point rather than fight all the angular momentum you'd already built up in your wheels if you tried to turn the bike through a hundred and eighty degrees. I just built from there."

"Fair enough. But your trick won't work more than once, Tomas. We'll be ready."

Tomas grinned. He had won a Stage, and that's more than his Arianespace sponsors had expected of him. "What trick ever did work more than once, Ernesto? Once is enough."

The media rats at the table looked puzzled, and now one of them turned to Ernest Muldoon. "I don't understand you. What 'trick' is this you're talking about?"

Muldoon stared at the woman, noted she was young and pretty, and gestured at her to sit down. He poured everyone a liter of orange juice. We competitors sweat away seven or eight kilos, pedaling a Stage, and we have to make sure we start out flush-full with liquids. Tomas took the opportunity to slide away while Muldoon was pouring. He'd had his juice, and some of the other competitors who were still straggling in might have a less enlightened attitude towards Tomas's innovation of the previous Stage.

"D'you understand how we change directions round in the middle of each Stage?" Muldoon asked the reporter. One reason Ernie is so popular with the Press is that he's never too busy to talk to them and explain to them. I noticed that now he had her hooked he had dropped the stage-Irish accent.

"I guess so. But I don't understand *why*. You're out in empty space, between the Stage points, and you've pedaled hard to get the wheels rotating as fast as you can. And then you shift everything around!"

"Right. An' here's the why. Suppose the rider—say, Trace here, the likely lad—hasn't reached the halfway point yet, and let's for the moment ignore any fancy maneuvers at Stage turn points. So he's pedaling like a madman—the only way he knows—and the wheels are whizzing round, and he's built up a voltage of something respectable on the rotating Wimshurst disks—say, a couple of million volts. That voltage goes into accelerating the ion stream out of the back of the bike, eh? The faster he pedals, the higher the voltage, the better the exhaust velocity on the ion drive, and so the faster goes our lad Tracy. And he's *got* to get that exhaust velocity

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high as he can, because he's only allowed fifty kilos of fuel per Stage, total. All right?''

''Oh, yes.'' The lady looked into Muldoon's slightly squinty eyes and seemed ready to swoon with admiration. He beamed at her fondly. I was never sure that Ernie Muldoon followed through with a woman while we were riding the Tour—but I'm damned sure if he *didn't* have them between Stages, he saved up credits and used them all when the Tour was over.

''All right.'' Muldoon ran his hand out along the table top. ''Here's Trace. He's been zooming along in a straight line, faster and faster. But now he gets to the halfway point of the Stage, an' now he's got to worry about how he'll get to the finish. See, it's no good arriving at the final docking and zooming right on through—you have to *stop*, or you're disqualified. So now Trace has a different problem. He has to worry about how he's going to *decelerate* for the rest of the run, and finish at a standstill, or close to it, when the bike gets to the docking point. The old-fashioned way—that means up to seven years ago—was pretty simple. Trace here would have turned the whole bike round, so that the ion drive was pointing the other way, towards the place he wanted to get to, and he'd keep on pedaling like the dickens. And if he'd planned well, or was just dumb lucky, he'd be slowed down by the drive just the right amount when he got the final docking, so he could hit slap against the buffers at the maximum permitted speed. Sounds good?''

She nodded. ''Fine.'' I didn't know if she was talking about the explanation, or Ernie-the-Lech Muldoon's hand resting lightly across hers. ''But what's wrong with that way of doing it?'' she went on. ''It sounds all right to me.''

Someday they're going to assign reporters to the Tour du Système who are more than twenty-two years old and who have some faint idea before they begin of the event they are supposed to be covering. It will ruin Muldoon's sex-life, but it will stop me from feeling like an antique myself. All the young press people ask the same damned questions, and they all nod in the same half-witted way when they get the answers.

I wanted to see how Ernest handled the next bit. Somehow he was going to have to get across to Sweet Young Thing the concept of angular momentum.

''Problem is,'' he said, ''while the wheels are spinning fast the bike don't want to turn. Those wheels are heavy glassite discs, rubbing against each other, and they're like flywheels, and so the bike wants to stay lined up just the way it is. So in the old days, the biker would have to stop the wheels—or at least slow 'em down a whole lot—then turn the bike around, and start pedaling again to get the wheels going. All the time that was happening, there was no potential difference on the Wimshurst's, no ion drive, and no acceleration. Big waste of time, and also for the second half of the Stage you were flying ass-backwards. So I did the obvious thing. I mounted a *double* ion drive on my bike, one facing forward, one facing back—turned out that the rules don't *quite* say you can't have more than one drive. They only say you can't have more than one ion drive on your bike

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in use at one time. They don't say you can't have two, and switch 'em in the middle of the Stage. Which is what I did. And won, for about two Stages, until everybody else did the same thing."

"But what was it that Tomas Lili did? He seemed to have come up with something new."

"He installed an ion drive that had more than just the two positions, fore and aft. His can be directed in pretty much any way he wants to. So, first thing that Tomas did on the last Stage, he went off far too fast—at a crazy speed, we all thought. And naturally he got ahead of all of us. *Then* what he did was to direct his ion beam at whoever was close behind him. The ions hit whoever he was pointing at—me, or Trace, or one of the others—and just about canceled out our own drives completely. We were throwing a couple of tenths of a gram of ion propellant out of the *back* of the bike at better than ten kilometers a second, but we were being hit on the front by the same amount, traveling at the same speed. Net result: no forward acceleration for us. It didn't *hurt* us, physically, 'cause we're all radiation shielded. But it slowed us. By the time we realized why we were doing so badly, he was gone. Naturally, Tomas wasn't affected, except for the tiny bit he sacrificed because his exhaust jet wasn't pointing exactly aft." Muldoon shrugged. "Neat trick. Works once—next time we'll stay so far out of his wake he'll lose more forward acceleration turing off-axis to hit us than he'll gain."

"You explain everything so clearly!" Their hands were still touching.

"Always try to help. But we've got to get ready for the Stage now. Will you be there at the finish?"

"Of course! I wouldn't miss it for anything."

Muldoon patted her hand possessively. "Then why don't we get together after it, and we can go over the action together? Next to last Stage, there ought to be fireworks."

"Oh, yes! Please."

As we left for the start dock, I shook my head at Muldoon. "I don't expect any particular fireworks today. No tricky course change, no solar flares—it should be the tamest leg of the Tour."

He stared back at me, owl-eyed, "And did I say the action would be on the course, boyo?"

We walked side by side to the main staging area. In twenty minutes we would be on our way. I could feel the curious internal tension that told me it was Tour-time again—more than that, it was the final Stages of the Tour. Something in my belly was winding me up like an old-fashioned watch. That was fine. I wanted to hang there in that start space all ready to explode to action. I touched Muldoon lightly on the shoulder—*good luck, Muldoon*, it meant; *but don't beat me*—then I went on to my station.

There was already a strange atmosphere in the preparation chamber. As the Tour progresses, that strangeness grows and grows. I had noticed it years ago and never understood it, until little Alberto Maimonides, who is probably the best sports writer living (my assessment) or ever (his own assessment) sampled that changing atmosphere before the Stages, and explained it better than I ever could. Either one of Muldoon's

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tree-trunk thighs has far more muscle on it than Maimonides's whole body, but the little man understood the name of the game. "At the beginning of the Tour," he said to me one day, "there are favorites, but everyone may be said to have an equal chance of winning. As the Tour progresses, the cumulative time and penalties of each rider are slowly established. And so two groups emerge; those with the potential to win the whole thing, and those with no such potential. Those two different potentials polarize the groups more and more, building tension in one, releasing tension in the other. Like the Wimshurst disks that you drive as you turn the pedals, the competitors build up their own massive potential difference. Beyond the halfway mark in the Tour, I can tell you in which group a competitor lies—without speaking a word to him! If a rider has a chance of winning, it is seen in the tension in neck and shoulders, in the obsessive attention to weather data, in the faraway look in the man's eyes. I can tell you at once which group a rider is in."

"And can you—" I began.

"No." He interrupted me. "What I cannot do, Trace, to save my life, is tell you who will win. That will be, by definition, the best man."

I wanted to be that best man, more than I had ever wanted anything. I was thinking of Alberto Maimonides as I lifted open the shell of my bike and began to inspect the radiation shielding. It was all fine, a thin layer in anticipation of a quiet day without much solar wind. The final Stage was another matter—the forecasts said we would see a lot more radiation; but that was another day, and until we finished today's effort the final Stage didn't matter at all.

The fuel tank came next. The competitors were not allowed to charge the fuel tank themselves, and the officials who did it always put in an exact fifty kilograms, correct to the microgram. But it didn't stop every competitor worrying over the tank, afraid that he had been short-changed and would run out of fuel in the middle of the Stage. People occasionally used their fuel too fast, and ran out before the end of a Stage. Without ion drive fuel they were helpless. They would drift miserably around near the docking area, until someone went out and fished them in. Then they would be the butt of all the other competitors, subject to the same old jokes: "What's the matter, Tish, got thirsty and been drinking the heavy water again?" "You're four hours late, Sven, she gave your dance to somebody else." "Jacques, my lad, we all warned you about premature ejaculation."

I climbed into the shell, and checked my trajectory. It was too late to change anything now, except how hard I would pedal at each time in the Stage. It would need something exceptional to change even that. I had planned this Stage long ago, how I would pace it, how much effort I would put in at each breakpoint. I slipped my feet into the pedal stirrups, gripped the handlebars hard, looked straight ahead, and waited. I was hyperventilating, drawing in the longest, deepest breaths I could.

The starting signal came as an electronic beep in my headset. While it was still sounding I was pedaling like mad, using low gears to get initial torques on the Wimshursts. After a few seconds,

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I reached critical voltage, the ion drive triggered on, and I was moving. Agonizingly slowly at first—a couple of thousandths of a *g* isn't much and it takes a while to build up any noticeable speed—but I was off.

All the way along the starting line, other bikers were doing exactly the same thing. There were various tricks to riding the Tour in the middle part of a Stage, but very little choice at the beginning. You rode as hard as your body would stand, and got the best speed as early as possible. Once you were moving fast you could relax a little bit, and let the bike coast. At the very end of the Stage, you made the same effort in reverse. Now you wanted to hold your speed as long as possible, to minimize your total time for the Stage. But if you had been too energetic at the beginning, or if your strength failed you at the end, you were in real trouble. Then you'd not be able to decelerate your bike enough. Either you'd shoot right through the docking area and whip out again into open space, or you'd demolish the buffers by hitting them at far more than the legal maximum. Both those carried disastrous penalties.

After half an hour of frantic pedaling I was feeling pretty pleased. My leg was giving me no trouble at all—touch wood, though there was none within thirty thousand miles. I could see the main competition, and it was where I wanted it to be. Muldoon was a couple of kilometers behind, Rafael Rodriguez of the NASA team was almost alongside him, and Tomas Lili was already far in the rear. I looked ahead, and settled down to the long grind.

This was a Stage with few tricky elements. During the Tour we started from low earth orbit, went all the way to L-4 in a series of thirty variable-length Stages, and then looped back in halfway to the Moon before we began the drive to Earth. Some Stages were geometrically complex, as much in the calculations as the legs. This one was the sort of Stage that I was thoroughly comfortable with. The only real variables today were physical condition and natural stamina. I was in the best shape I had ever been, and I was convinced that if my legs and determination held out I had everyone beat.

Twenty-six hours later I was even more convinced. We had passed the crossover point long ago, and I had done it without any complication. I could still see Muldoon and Rodriguez in my viewfinder, but they had not closed the gap at all. If anything, I might have gained a few more seconds on them. No one else was even in sight. There was a terrible urge to ease off, but I could not do it. It was *cumulative* time that decided the Tour winner, and Muldoon and Rodriguez had both started this Stage nearly a minute ahead of me. I wanted to make up for that today, and more. The yellow jersey might be enough for Tomas Lili, but not for me. I wanted the whole pie.

I had taken my last liquid three hours ago, draining the juice bottle and then jettisoning it to save mass. Now my throat was dry and burning, and I'd have given anything for a quarter liter of water. I put those thoughts out of my head, and pedaled harder.

It turned out that I left my final sprint deceleration almost too late. Twenty-five kilometers out I realized that I was

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approaching the final docking area too fast. I would slam into the buffers at a speed over the legal limit. I put my head down, ignored the fact that my legs had been pumping for nearly twenty-seven hours straight, and rode until I thought my heart and lungs would burst. I didn't even see the docks or the final markers. I guess my eyes were closed. All I heard was the loud *ping* that told of an arrival at legal speed. And then I was hanging on the handlebars, wishing some kind person would shoot me and put me out of my misery.

My chest was on fire, my throat was too dry to breathe, my heart was racing up close to two hundred beats a minute, and my legs were spasming with cramps. I clung to the handlebars, and waited. Finally, when I heard a second *ping* through my helmet's radio, I knew the second man was in. I looked up at the bigboard readout. It was Muldoon, following me in by one minute and seventeen seconds. He had started the day one minute and fourteen seconds ahead of me on the cumulative total. I had won the Stage—and I was now the overall Tour leader.

I groaned with pain, released my harness, and cracked open my bike. I forced a big grin onto my face for the media—more like a grimace of agony, but no one would know the difference—and managed to climb out onto the docking facility just as though I was feeling light and limber. Then I sauntered along to where Muldoon was slowly opening his bike. One cheery smile for the benefit of the cameras, and I was reaching in to lift him lightly clear of the bike.

He glared up at me. "You big ham, Trace. What was your margin?"

"One minute and seventeen seconds."

"Ah." It was more a groan of physical agony than mental as he tried to stand up on the dock. His thigh muscles, like mine, were still unknotting after over a day of continuous effort. "So you're ahead then. Three seconds ahead. And with a new Stage record. Damn it."

"Thanks. You're just a terrific loser, Muldoon."

"Right. And it takes one to know one, Trace." He did a couple of deep knee-bends. "What about the others. Where did they finish?"

"Schindell came in two minutes after you. He's about four minutes behind us, overall. Something must have happened to Rodriguez, because he's still not in."

"Leg cramps. We were riding side by side for a long time, then he dropped way behind. I'm pretty sure he had to stop pedaling."

"So he's out of the running."

We stared at each other. "So it's me an' thee," said Muldoon after a few moments. "Barring a miracle or a disaster, one of us will be *it*."

It! Overall Tour Winner. I wanted that so much I could taste it.

Muldoon saw my face. "You're getting there, Trace," he said. "Muscle and heart and brains will only take you so far. You have to *want* it bad enough."

I saw *his* face, too. His eyes were bloodshot, and sunk so far back that they were little glowing sparks of blue at the end of dark tunnels. If I had reached a long way into myself to ride this Stage, how far down had Muldoon gone? Only he knew that. He *wanted it*, as much as I did.

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"You're getting old, Ernie," I said. "Alberto Maimonides says that the Tour's a young man's game."

"And what does he know, that little Greek faggot!" Muldoon respected Maimonides as much as I did, but you'd never know it if you heard them talk about each other. "He's talking through his skinny brown neck. The Tour's a *man's* game, not a *young* man's game. Go an' get your yellow jersey, Trace, and show your fine profile to the media."

"What about you? They'll want to see you as well—we're neck and neck for overall Tour position. How long since non-team riders have been one and two in Tour status?"

"Never happened before. But I've got work to do. Weather reports to look at, strategy to plan. You can handle the damned media, Trace—time you learned how. And I'll tell you what." He had been scowling at me, but now he smiled. "You look at all the pretty young reporters, and you pick out the one who'd be my favorite. An' you can give her one for me."

He stumped off along the dock. I looked after him before I went to collect the yellow jersey that I would wear for the final Stage, and pose with it for the waiting mediamen. Ernie hadn't given up yet. There was brooding and scheming inside that close-cropped head. He was like a dormant volcano now, and there was one more Stage to go. Maybe he had one more eruption left in him. But what could it possibly be?

I was still asking that question when we lined up for the beginning of the final Stage. Yellow jersey or no yellow jersey, I hadn't slept well last night. I dreamed of the swoop towards the finishing line, with its massed cameras and waiting crowds. There would be hordes of space tugs, filled with spectators, and video crews from every station on Earth or Moon. And who would they be homing in on, to carry off and interview until he could be interviewed no more?

In the middle of the night I had awakened and wandered off to where the rows of bikes were sitting under twenty-four hour guard. The rules here were very simple. I could go to my bike, and do what I liked with it; but I could not touch, or even get too close to, the bike of another competitor. The history of the rule was something I could only guess at. It made psychological sense. No competitor wanted *anybody* else touching his beloved bike. We suffered the organizers to fill our fuel tanks, because we had no choice; but we hovered over and watched every move they made, to make sure they did not damage so much as a square millimeter of paint.

The bike shed was quiet when I got there. A couple of competitors were inside their bikes, fiddling with nozzles, or changing the position of juice bottles or viewfinders or computers. It was all just nerves coming to the fore. The changes they were making would not improve their time by a tenth of a second. Ernie Muldoon was inside his bike, too, also fiddling with bits and pieces. He stopped when he saw me, and nodded.

"Can't sleep, either?"

I shrugged. "It's not easy. Plenty of time for sleep tomorrow night, when the Tour's over."

"Nobody wants to sleep when it's

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over. We'll all be partying, winners and losers."

"Wish it were tomorrow now."

He nodded. "I know that feeling. Good luck, Trace."

"Same to you, Ernie."

I meant it. And he meant it. But as I sat at the starting line, my feet already in the pedal stirrups, I knew what that well-wishing meant. Neither of us wanted anything bad to happen to the other; all we wanted was to *win*. That was the ache inside. I looked around my bike for the last time. The radiation shielding was all in position. As we had surmised the day before yesterday, the weather had changed. There was a big spike of solar activity sluicing through the Inner System, and a slug of radiation was on its way. It would hit us close to the halfway point of the final Stage, then would diminish again when the Tour was over. The maximum radiation level was nowhere near as high as it had been in the Tour two years ago, but it was enough to make us all carry a hefty load of shielding. The prospect of hauling that along for twenty-six thousand kilometers was not one I was looking forward to.

The electronic beep sounded in my helmet. We were off. A hundred and six riders—we had lost thirty-four along the way to injuries and disqualification—began to pedal madly. After half a minute of frenzied, apparently unproductive activity, the line slowly moved away from the starting port. The airlock had been opened ten minutes before. We were heading out into hard vacuum, and the long, solitary ride to the finish. No one was allowed to send us any information during the Stage, or to respond to anything other than an emergency call from a competitor.

The optimal trajectory for this Stage had been talked about a good deal when the competitors held their evening bull sessions. There were two paths that had similar projected energy budgets. The choice between them depended on the type of race that a competitor wanted to ride. If he were very confident that he would have a strong final sprint deceleration, then trajectory one was optimal. It was slightly better overall. But if a rider were at all suspicious of his staying power at the end, trajectory two was safer.

The two trajectories diverged early in the Stage, and roughly two-thirds of the riders opted for the second and more conservative path. I and maybe thirty others, praying that our legs and lungs would stand it, went for the tougher and faster route.

Muldoon did neither of these things. I knew the carapace of his red-and-black bike as well as I knew my own, and I was baffled to see him diverging from everyone else, on another path entirely. I had looked at that trajectory myself—we all had. And we had ruled it out. It wasn't a disastrous choice, but it offered neither the speed of the one I was on, nor the security of the path most riders had chosen.

Muldoon must know all that. So where was he going?

I had plenty of time to puzzle in the next twenty-four hours, and not much else to occupy my attention. Before we reached midpoint where I reversed my drive's direction, all the other riders in my group had diminished to dots in my viewfinder. They were out of it, far be-

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hind. I had decided that after today's Stage I would take a year to rest and relax, but I wouldn't relax now. I pushed harder than I had ever pushed. As the hours wore on I became more aware of the radiation shielding, the stone that I was perpetually pushing uphill. A *necessary* stone. Outside my bike was a sleet of deadly solar particles.

Even though the group of competitors who had ridden my trajectory were just dots in the distance behind me, I didn't feel at all relaxed. On the Tour, you *never* relax until the final Stage is ridden, the medals have been awarded, *and* the overall winner has performed the first step-out at the Grand Dance.

At the twenty-third hour I looked off with my little telescope in another direction. If anyone in the slow, conservative group had by some miracle managed to ride that trajectory faster than anyone had ever ridden it, they ought to be visible now in the region that I was scanning. I looked and saw nothing, nothing but vacuum and hard, unwinking stars.

The final docking area was at last in sight, a hundred kilometers ahead of me. I could begin to pick up little dots of ships, hovering close to the dock. And unless I was very careful, I was going to shoot right through them and past them. I had to shed velocity. That meant I had to pedal harder than ever to slow my bike to the legal docking speed.

I bent for one last effort. As I did so, I caught sight of something in my rear viewfinder.

A solitary bike. Red and black—Muldoon. But going far too fast. He was certainly going to overtake me, but he was equally certainly going to be unable to stop by the time he reached the dock. He would smash on through, and either be disqualified or given such a whopping time penalty he would drop to third or fourth place.

I felt sorry for him. He had done the almost impossible, and ridden that inefficient alternate trajectory to within a few seconds of catching me. But it was all wasted if he couldn't dock; and at the speed he was going, that would be just impossible.

Then I had to stop thinking of him, and start thinking of myself. I put my head down and drove the cranks around, gradually increasing the rate. The change in deceleration was too small for me to feel, but I knew it was there. The ions were pushing me back, easing my speed. I was vaguely aware of Muldoon's bike moving silently past mine—still going at an impossible pace.

And so was I. It was the mass of all the shielding, like a millstone around my bike. The inertia of that hundred extra kilos of shielding material wanted to keep going, dragging me and the bike with it. *I had to slow down.*

I pedaled harder. Harder. The docking area was ahead. *Harder!* I was still too fast. I directed the bike to the line instinctively, all my mind and will focused on my pumping legs.

Stage line. Docking guide. Docking. Docked!

I heard the *ping!* in my helmet that told of a docking within the legal speed limit. I felt a moment of tremendous satisfaction. *All over. I've won the Tour!* Then I rested my head on my handlebars and sat for a minute, waiting for my

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heart to stop smashing out of my rib cage.

Finally I lifted my head. I found I was looking at Muldoon's red and black racing bike, sitting quietly in a docking berth next to mine. He was slumped over the handlebars, not moving. He looked dead. The marker above his bike showed he had made a legal docking. Impossible!

His bike looked different, but I was not sure how. I unlocked my harness, cracked the bike seals, and forced myself outside onto the dock. As usual my legs were jello. I wobbled my way along to Muldoon's bike. I knocked urgently on the outside.

"Muldoon! Are you all right?" I was croaking, dry-throated. I didn't seem to have enough moisture left in my body for one spit.

I hammered again. For a few seconds there was no response at all. Then the cropped head slowly lifted, and I was staring down into a puffy pair of eyes. Muldoon didn't seem to recognize me. Finally he nodded, and reached to unlock his harness. When the bike opened, I helped him out. He was too far gone to stand.

"I'm all right, Trace," he said. "I'm all right." He sounded terrible, anything but all right.

I took another look at his bike. Now I knew why it looked different. "Muldoon, you've lost your shielding. We have to get you to a doctor."

He shook his head. "You don't need to. I didn't get an overdose. I didn't *lose* that shielding. I shed it on purpose."

"But the radiation levels—"

"Are down. You saw the forecasts for yourself, the storm was supposed to peak during the Stage and then run way down. I spent most of last night fixing the bike so I could get rid of shielding when the solar flux died away enough. That happened six hours ago."

I suddenly realized how he had managed that tremendous deceleration at the end of the race. Without an extra hundred kilos of shielding dragging him along, it was easy. I could have done the same thing.

And then I felt sick. Any one of us could have done what Muldoon had done—if we'd just been smart enough. The rules let you jettison anything you didn't want, empty juice bottles, or radiation shielding. The only requirement is that you don't interfere with any other rider. Muldoon had thrown a lot of stuff away, but by choosing a trajectory where no one else was riding, he had made sure he could not be disqualified for interference.

"You did it again," I said. "How far ahead of me were you when you docked?"

He shrugged. "Two seconds, three seconds. I'm not sure. I may not have done it, Trace. I needed three seconds. *You may still have won it.*"

But I was looking at his face. There was a look of deep, secret joy there that not even old stoneface Muldoon could hide. He had won. And I had lost. Again.

I knew. He knew. And he knew I knew.

"It's my last time, Trace," he said quietly. "This one means more than you can imagine to me. I'll not win any more. Maimonides is quite right, the Tour's a young man's game. But you've got lots of time, years and years."

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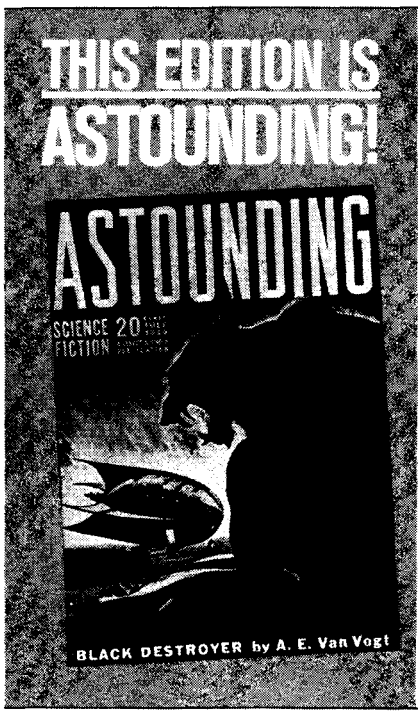
I had been wrong about the moisture in my body. There was plenty, enough for it to trickle down my cheeks. "Damn it, I don't *want* it in years and years, Ernie. I want it *now*."

"I know you do. And that's why I'm sure you'll get it *then*." He sighed. "It took me eight tries before I won, Trace. Eight tries! I thought I'd never do it. You're still only on your third Tour." Ernie Muldoon reached out his arm and draped it around my shoulders. "Come on now, lad. Win or lose, the Tour's over for this year. Give a poor old man a hand, and let's the two of us go and talk to them damned media types together."

I was going to say no, because I couldn't possibly face the cameras with tears in my eyes. But then I looked at his face, and knew I was wrong. I could face them crying. Ernie Muldoon was still my model. Anything he could do, I could do. ■



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W.R. Thompson

HEALTH FOOD

One of the most perverse facts about the universe is that it doesn't *care* what you believe!

"I *know* it causes cancer in lab rats," Susan Cramer said, as she picked up her cola. "The question is, does it cause cancer in humans?"

Saul Perkins smiled indulgently. "Are you looking for a new research topic?"

"No. I'm perfectly serious." The geneticist finished her soft drink, and put the can down on her lunch tray. "A dozen chemicals in what I just drank are known to cause a high incidence of cancer in laboratory animals. When you consider that four-fifths of the people in the world drink the stuff every day, don't you find it odd that the cancer rates haven't shot sky-high?"

"Not especially," Saul said. "Point one, the lab animals receive a much higher level of chemicals than humans ever do. Point two, cancer rates are down because of improved health care. We do a lot of screening these days, and we start treatment at the first sign of a pre-cancerous condition."

"But you don't find as many pre-cancerous conditions as you'd expect," the other doctor persisted. "That makes me wonder how much we can rely on lab-animal tests. For example, how can we know for sure that the metabolism of rats, mice, and guinea pigs are close enough to the human metabolism to give us meaningful data?"

"The similarities and differences are fairly well established," Saul said.

"I know, but they were all estab-

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lished in the last century," Susan said. "And let's face it, old research isn't always reliable."

"The twentieth century wasn't exactly the Stone Age, you know." Saul smiled indulgently. Sue was a new doctor, but she had already learned that the best way to establish a medical reputation was in research. Find an intriguing problem, get a research grant, and set to work. "Well, you'll have to excuse me. I have a new patient waiting for me." Saul got up and left the hospital cafeteria.

The new patient turned out to be young, athletic, and comatose. Saul's snap diagnosis was of anemia, probably brought on by a dietary deficiency. The doctor had seen other jocks like this one, trying to live on faddish "health" diets. No doubt some health guru had advised the kid to avoid certain foods; the youth wouldn't have realized that the diet left out something vital—iron, in this case.

The bioscan didn't support that diagnosis. While the patient's blood showed an unmistakable hemoglobin deficiency, there was a higher than normal level of iron in his system. It was as if something had kept the youth from metabolizing the iron, Saul thought.

Badly puzzled, the doctor spent the next few days quizzing everyone connected with his patient. The exercise only added to the mystery. The teenager was the star quarterback on his high school football team, and for the past few months he had been living on a diet which had been drawn up by the school's athletic department. Saul found nothing wrong with the diet, which had been designed to pamper a star athlete's health. The kid had never touched drugs, alcohol, or anything else that might damage his health. There were no pollutant sources around the school or his home. If anything, the doctor thought, his patient should have been healthier than normal. Despite that, the youth remained comatose.

As a precaution, Saul ordered his patient isolated in an intensive care unit, on the chance that he was suffering from a new and potentially infectious disease. However, extensive tests—and, within a month, an autopsy—revealed nothing.

One camera showed exuberant, wild-faced men and women throwing books through the night air. The second camera showed the books landing in a bonfire. Camera three showed the Reverend Perry Fountain, smiling his patented smile as he delivered his sermon. The screen switched from camera to camera, but the audio never switched away from the self-satisfied voice:

"My friends, God does not care what scientists believe, and neither should we. For too long they have mocked God's words, while the devout have mumbled apologies for their faith. They have replaced Holy Writ with their humanist lies, while Satan dresses up his ancient deceptions with names like 'evolution' and 'parapsychology' and 'psychiatry.' And yet, every day our government gives them your hard-earned tax dollars. The people *you* voted for permit these atheistic scientists to sacrifice *your* money at the dark altars of science and 'reason'—"

Saul managed to hit the "off" switch on the fourth try; he was drunk, angry, and off-balance. In the past year, he had watched more and more people die from

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the malady his colleagues had named Perkins's Syndrome. In a blurry way, he found it flattering to have his name attached to a disease . . . but he wished that a cure could be attached to the disease.

That wasn't likely. Perry Fountain and his Redeemer movement were gaining power every day, and they opposed wasting money on research. Perkins, who had been trained by Jesuits, knew that his mentors could have argued rings around Fountain's barnyard theology —but that wouldn't have mattered to the Redeemers. Fountain had revealed the divine truth to them, and part of his truth was the science was the Devil's plaything.

Saul stared blankly at the dead television screen. He saw no way to reason with people who burned books on primetime TV.

Social scientists found themselves wrangling over theories of contagious insanity and social resonance. Around the time that the Redeemer movement peaked in the United States, the Eternal Revolution began in China, and the final wave of Islamic fundamentalism erupted in the Middle East. In both regions foreigners were expelled, their properties confiscated or destroyed. Foreign clothing, food, and music were banned. In some places the death penalty was imposed for knowing a foreign language or for having associated with foreigners in the past. Only the onset of the Pandemic ended the convulsions.

The first cases of Perkins's Syndrome in China and Syria were attributed, respectively, to the KGB and the CIA, and they were used to whip up even more xenophobic hysteria. Within a few months, however, enough people were victims of PS to hamper the running of the afflicted countries. In another month, social breakdown was all but complete. Amid dead and dying people, what remained of most local governments began calling for help. In some cases the governments had to be overthrown before the calls could get out; some mullahs and comrades preferred death to the degradation of foreign help, and the firing squads respected their preferences.

Saul Perkins found himself drafted into the UN Relief Forces. After a week of basic training, in which he almost learned not to salute left-handed, he was promoted to colonel, assigned to a relief battalion, and dispatched to the Beijing zone.

Ten years after observing the first case of the syndrome which bore his name, Saul still had no idea of what caused it. Virus? Bacteria? Heavy metal poisoning? Radio waves? No explanation worked—and thanks to the Redeemers, he thought bitterly, he had been unable to conduct any proper research. He didn't even know if PS was contagious, a possibility which weighed heavily on the minds of the relief workers.

The doctor had no energy to waste on such worries; he was too busy with his patients. By his estimates, ninety-five percent of the people in his duty region were ill and dying. The few healthy people were busy disposing of the dead and working in the great open-air hospitals. Food and water became scarce, and any leftover supplies from the battalion mess went to the hospitals.

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The sanitation problems threatened to start epidemics of their own.

Even under such conditions, Saul demanded that his harried medical staff keep the most complete records possible. Thus, when some of his patients began to recover, it didn't take the doctor long to discover that they were the ones who had eaten mess-hall rations, instead of the more nutritious relief supplies.

The experiments which Saul ran over the next week were crude and hasty, but they told the doctor what he needed to know. Any one of several soft drinks would alleviate the symptoms of Perkins's Syndrome; the victims would begin metabolizing iron almost as soon as they drank the stuff, and the anemia would begin clearing up within a day. The last traces would fade within a month.

The cure pleased the patients, the relief force workers, and the stockholders of various cola producing companies. It displeased the Redeemers, who had never liked foreigners and thought that the Pandemic was God's will. The treatment left Saul dissatisfied; he had his cure, but he had no idea of how it worked, or of what caused the Syndrome.

"In a way, it explains why so many health faddists died," Saul told Sue Cramer, when they met at a medical conference a year later. "They all gave up junk foods right off the bat, and when they got sick, well, naturally no nutritionist would give them garbage. And when all the Chinese and Arabs stopped drinking colas—" he stopped and swore. "I just can't imagine any addiction having such severe withdrawal symptoms!"

"The syndrome isn't related to addiction," Sue said. "As near as anyone can tell, folks with PS *need* the caramel coloring that they put into the brown colas. It seems to let them metabolize iron. Without the stuff their bodies just can't produce hemoglobin."

"Impossible," Saul said. "People have gotten along without caramel for umpteen generations. Why should it suddenly become a major factor in human health?"

"I may have an answer." Sue glanced around nervously. There were no monitors in the room, and it was improbable that anyone at the conference would file a report, but she had learned caution since the Redeemers came to power. "You see, I've done some research. With white mice, you know."

"What!" Saul gasped. "How did you get permission?"

"Who says I asked?" Sue said quietly. "I bought the mice at a pet store, and I've bred and raised them at home. President Fountain never outlawed pets or hobbies, you see. Anyway, you remember how I used to wonder if lab animals reacted to carcinogens in the same way as humans?"

"Of course. You kept harping on it. I take it you found that their reactions are different?"

"Not exactly," she said. "Listen. One of the weaknesses of the old cancer investigations was that they only examined one generation of animals. They would dose mice or guinea pigs or whatever with as suspected carcinogen, and sacrifice them to perform autopsies. Nobody was interested in the effect of

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carcinogens on future generations of mice."

"Well—wait," Saul said. "Weren't there studies on mutagenic effects?"

"A few," Sue nodded. "But nobody ever looked at multi-generation effects. I exposed over a dozen generations of white mice to cyclamates." She looked wry. "I would have done it the old fashioned way, starting out with fresh, uncontaminated mice for each experiment, but I was afraid that somebody would get suspicious if I bought too many mice. So I raised generation after generation of mice on a cyclamate-heavy diet.

"At first I got some extremely high cancer rates. That went on for a long time, but in the last few generations, the mice stopped getting cancer. They adapted to a highly carcinogenic diet."

Saul was astounded. "You're saying they *evolved?*"

"Survival of the fittest," Sue agreed. "The interesting thing is that the transition was sharp. One generation had the usual high death rate. The next generation of mice had no cancer, although they were up to their whiskers in cancer-causing gunk. It was as if they'd made a quantum change." She sighed. "I wish I could have worked with a much larger gene pool. What I know now is just enough to tantalize me."

"What happens when your mice don't get their cyclamates?"

"Nothing," Sue admitted. "They don't need it, the way PS victims need caramel. The point is that they adapted to cyclamates, and I can't help thinking that something similar happened to humanity."

Saul scratched his chin. "Do you still have your mice?"

"Caramel-flavored soft drinks first became popular in the late nineteenth century," Sue told the other doctors at the clandestine seminar. "They spread around the globe during World War Two, and their popularity has remained high ever since. The estimates say that, in the past seventy years, four out of every five people on Earth have imbibed significant amounts of caramel-flavored colas—the brown colas—throughout their lives. These people represent a major fraction of the gene pool.

"Caramel itself is a nontoxic organic chemical, derived from glucose. My research shows that, once consumed, minute traces of it can remain in the human body for weeks, even months. This persistence is important; it means that caramel has become a pervasive factor in the environment.

"Now—" Sue pointed to a pair of charts. "This chart shows the set of genes which produce hemoglobin in normal human beings—I mean, people without the genes for PS; 'normal' people now make up less than a tenth of the human race. *This* chart shows the hemoglobin-producing genes of people with Perkins's Syndrome. As you can see, the victims of PS are missing a significant portion of this gene-set—and the genes they *do* retain are different."

"But they still produce normal hemoglobin," somebody said.

"Well, there are trivial differences in their hemoglobin," Sue said, "But, yes, when they have caramel in their diet they can produce good, useful hemoglobin. We still have to work out

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hemoglobin's role in the process, but that's just a matter of time. Now, considering the fact that the genetic code for hemoglobin production in PS victims is shorter than the normal code, I think it's safer to assume that the new process is more efficient and reliable than before. There are fewer steps involved, with fewer chances for things to go wrong."

"Meaning what?" a doctor demanded.

Sue hesitated. The Seventy-First Amendment had outlawed any mention of evolution, and word of this would travel fast—but what the hell, she thought. "It means that the human race has adapted to the presence of caramel," Sue stated, patting that chart. "We've evolved, and now some ninety percent of the human race uses caramel as—well, as a vitamin."

"But how could this happen?" a biochemist asked.

Sue shrugged. "Who knows? How did the human race lose the ability to synthesize vitamin C? How did we evolve to extract that vitamin from citrus fruit?"

"That isn't my question," the biochemist said. "I can see this change happening in a few isolated individuals, and slowly spreading through the gene pool—but that's a slow process. It might take scores of generations. How could it happen so rapidly?"

"I have a theory," Sue said. "Logically, a mutation requires a mutagen. Now, a mutagen can be something simple, such as ionizing radiation, or—"

"Radiation works at random," a geneticist objected. "You can't expect it to make systematic changes! Chemical mutagens are a bit more specific, but depending on the complexity of their structure, they can cause dozens, hundreds, or thousands of distinct changes in the structure of DNA."

" 'Depending on the complexity of their structure,' " Sue repeated. "We're talking about chemical reactions here. Suppose that a mutagen had a structure so complex that it could react with only *one* specific sequence of nucleotides which make up DNA? In other words, with only one gene, or gene-set? Everybody exposed to this particular mutagen would inevitably suffer from the exact same genetic shift."

"Have you got a candidate for this mutagen?"

"Not yet," Sue said, "But I know it exists. It must. After all, we've seen that this mutation is commonplace. That can only happen if the cause of the mutation is equally widespread.

"As to my suspicions . . . every year, since the dawn of the Industrial Age, we've introduced more and more chemicals into the environment. Coal smoke. Petrochemicals. Insecticides. Dyes, paints, and inks. Pharmaceuticals, legal and illegal. Fertilizers, deodorants, food additives, plastics—an endless list."

"Not all of those things are mutagenic," a doctor said.

"Some of them are," Sue said. "Some of them cause mutations in human beings. A few cause mutations in viruses, which are highly susceptible it mutation, *and* which can cause genetic rearrangements in humans. Other chemicals aren't mutagenic, but they can break down and recombine to form other substances, and some of those are mutagenic. Still other chemicals are changed when they get involved in the myriad biochemical reactions inside the human

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body, and some of *their* end products are mutagens."

"Pandora's Box," somebody mused, "Or, maybe, Pandora's Cauldron. When you think about all the possible reactions, all the synergisms, it's obvious that there are now billions, perhaps trillions, of different chemicals in the environment. If even a tiny percentage of those new chemicals are mutagenic, we're still looking at an overwhelmingly large number."

"You see it," Sue agreed. "In regard to Perkins's Syndrome, we're obviously looking for a mutagen which has an extremely complicated molecular structure, and only one isomer at that, and yet can be found anywhere on Earth—at least, anywhere that people have been exposed to industrial products and by-products—"

"That covers the whole damn planet," somebody muttered disconsolately. "Colas are everywhere. So are petrochemicals, pollutants, viruses, aerosols, name it. These days, *everything* is common everywhere."

The geneticist was shaking her head. "Doctor Cramer, there's a flaw in your theory. Most mutations are detrimental, and most detrimental mutations are fatal to the organism. The typical mutation-bearing zygote dies soon after fertilization. Few of them survive the gestation period and live to reach adulthood. If the world *is* stewing in mutagens, I'd expect to see a horrendous drop in the birth rate."

"And you have," Sue told her. "Follow through on your logic. Industrialization means more mutagens; more mutagens mean fewer live births. Now, it is well known that, as a society industrializes, its birth rate decreases—"

"For social reasons," somebody interrupted.

"Name one 'social reason' that can prevent pregnancy," Sue retorted. "Late marriages, for example, just mean delayed wedding bells—and a rise in the illegitimate birth rate. The gay lifestyle isn't any more common now than it was in preindustrial times. Sex is as prevalent in industrial societies as it is in agrarian cultures—perhaps even more prevalent—and reliable means of birth control didn't become common until the latter part of the twentieth century. That was long after the birth rate began its decline in industrial societies. The only way I can account for this decline is by assuming that most pregnancies did not go to term. This has to be the effect of non-viable mutations weeding themselves out."

"But most viable mutations are still detrimental," a doctor observed. "The chances of a mutation being an improvement—"

"How can you define an 'improvement'?" Sue asked. "And who said that Perkins's Syndrome is an improvement in anything? It's just something that happened. And when you have enough mutations, it's inevitable that some of them will be viable. Given the changes we've made in the environment, is it really so surprising that we should adapt to some of them? And if everyone is exposed to the same mutagen—"

"Nonsense" was the politest word which came out of the ensuing babble.

The unofficial chairman pounded his fist on the table until order was restored. "All we can say," he said, "Is that we've observed this change in the human race. As to the human race's undergoing further evolution—well, our

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understanding of evolution is incomplete. No doubt these events will give us new insights into its workings, but it remains to be seen if they represent an improvement in the race."

Sue had the unpleasant feeling that the human race had done anything but improve lately—and that she would see proof of that, just as soon as the word of this meeting got around.

Word did get around, and within a month the wheels of law began to turn. Sue found herself indicted for preaching evolution, heresy, sedition, and other related charges. Like ripples on a pond, the word spread around Earth, and some of those ripples were reflected back to America. The first response came from Radio Moscow, which announced that the current American Administration proved that evolution worked—in reverse. Radio South Africa sedately informed the world that, unlike lesser races, the Afrikaaners were immune to evolution. While the rest of the world snickered at the American controversy, the BBC interviewed an elderly American astronomer, living in self-exile in London:

"Well, that's how evolution works, by mutation and by luck. Billions and billions of people have been drinking colas for over a century, and clearly some of the substances in these refreshments have mutagenic properties. Fortunately for us, this is a beneficial mutation."

"But hasn't the human race finished evolving, Doctor?" the interviewer asked.

"No, it hasn't. Evolution is an ongoing process, and its goal is to produce ever-higher forms of intelligence. We've seen the effect of that already, in both China and the Islamic nations. Even a century ago, most people would have preferred death to a change in their deepest convictions. Now, however, these folks have accepted the need for foreign contact. Their intelligence has overcome their xenophobia, and accommodated itself to reality. This is a dramatic development in human behavior, and I can only take it as proof that our evolution has moved forward."

"But what of the hundreds of millions of deaths in the recent past?"

"Naturally, we mourn them. However, nobody could have foreseen this tragedy—although proper scientific research, unfettered by superstitious restraints, could have revealed our new dependence on the 'junk-food vitamins' before the calamity developed. That alone would have precluded the recent horrors.

"Happily, there is no likelihood of a second such disaster. We know how to handle Perkins's Syndrome, and that alone can keep us from stumbling back into the Pandemic. Furthermore, the genes that made our hemoglobin are now doing something far more wonderful."

"I'm afraid I don't quite follow you," the interviewer apologized.

"Well . . . Think of the forty-six human chromosomes as forty-six books, and of each gene as a single page in those books. This mutation has erased the several pages that once governed the production of human hemoglobin, and replaced them with shorter, simpler instructions. That left several blank pages, which are now carrying blueprints to

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give us better brains and more intelligence. This is an inevitable step forward in the ongoing evolution of the human race—''

Saul switched off the TV in disgust. Ordinarily he drew a good deal of pleasure from the illegal foreign newscasts, and there had been little interference with the British satellite broadcast. It was too bad that the interview had been a lot of nonsense. ''Evolution doesn't work that way,'' he said angrily.

''I know, Solly.'' Sue nodded absently as she reviewed the legal briefs. Her trial was months away, but the verdict was a foregone conclusion. It was too bad, she reflected, that the government had broken off all contact with the heathen outside world. She would have liked to defect to Canada.

''Evolution's only goal is to adapt life to the world,'' Saul muttered. ''Why can't the old boy admit that? People *are* being reasonable about this mess, but that doesn't prove we've gotten any smarter.''

''I know, Solly.'' Marsupial justice, Sue thought, shuffling the papers. A kangaroo court. The judge already has the verdict in his pouch.

''I tell you, it's rank mysticism. We've adapted, somehow, to a change in our environment, but that's a simple physical change. Our bodies are just producing hemoglobin more efficiently than before. The only new 'intelligence' we need is to have enough sense to keep drinking soda pop.''

''I *know*, Solly.'' Susan sighed, and gave up reading the legal papers. The prospect of burning at the stake made it difficult to concentrate on them. ''People are being sensible, but that's just because they have no choice. There's no way that this situation could improve the human race; it hasn't enhanced our brains, and it hasn't weeded out the idiots from the gene pool. All it's done is to provoke the Redeemers.''

Saul nodded glumly. ''I hate to think how the rabble will react, when they're told that the human race is still evolving.''

One camera showed exuberant, wild-faced men and women throwing bottles through the torchlit night air. The second camera showed the bottles bursting against a brick wall, while dark brown fluid splashed and fizzed. Camera three showed the Reverend President Perry Fountain, smiling his patented smile as he delivered the State of the Union sermon:

''My fellow Americans, now the idolaters claim that the human race is still 'evolving.' They deny that Almighty God created the human race perfect and complete. As proof, brethren, they say that you will die without this liquid candy.

''If there have been any changes in God's creation, they are most assuredly the work of the Devil, who conjured up the lie of 'evolution' in the first place. Now, my fellow Americans, we can overcome Satan's workings and his minions. Defy any power the Old One may have over you! Smash those bottles, crush those cans! Show the unrighteous, pagan scientists that you can live without the Demon Drink!'' Fountain's smile turned almost sincere as he smashed a wasp-waisted bottle. ''We'll show them who's evolving!'' ■

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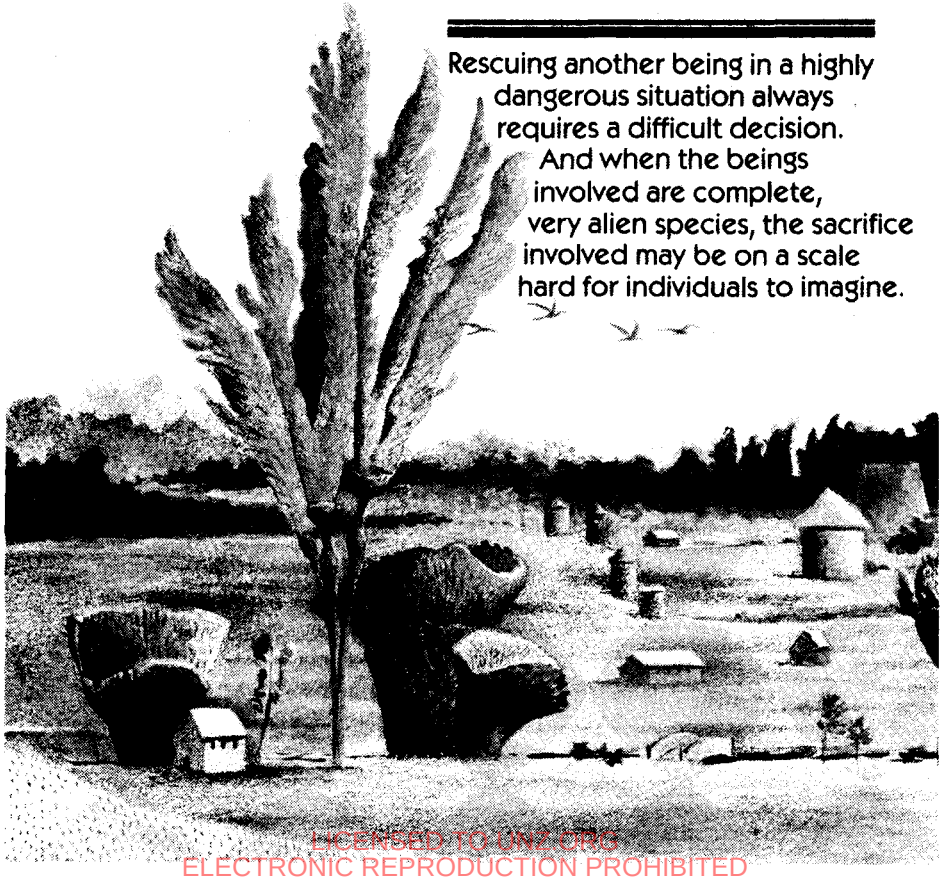
Don Sakers

ALL FALL DOWN

Rescuing another being in a highly dangerous situation always requires a difficult decision. And when the beings involved are complete, very alien species, the sacrifice involved may be on a scale hard for individuals to imagine.



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In the quiet night of this eternal wood, I lift my soul to the stars in the waves of the Inner Voice. I sing, as the Hlutr have sung since the beginnings of life. My roots are deep in the lush soil of this world that now, after the fashion of the Humans, we call Amny. My limbs rise high into the fresh, clear air, reaching for the dim radiance of the distant stars in lieu of the vanished sun. And I sing.

Answering voices come from the sky and beyond: a chorus of my brethren on a million worlds. Most of them are Hlutr, for we alone of all the races have mastered the mystery of the Inner Voice. In this way, as in our physical stature, we stand above all other creatures; in this way, we do our duty to the Universal Song. For how could there be a Song, without the Hlutr to sing . . . ?

I sing, and this should be pleasure. I seek the communion of my race, the oneness that comes through the Inner Voice and lifts us all far beyond the various worlds we inhabit. The animal races, however mobile, are bound by their very nature, bound in space to one particular location; only the plants, seemingly sessile, have truly transcended all boundaries. This night, I sing, and in my song I seek to become one with the Universal Song.

This should be a pleasure. Yet too soon, before I am even begun, a discord intrudes. It begins faintly, a mere hint of the song gone wrong, and I turn my soul away from it in my attempt to fly the night. Yet the discord is still there, on the worlds of the Hlutr and in the empty spaces where only our dormant spores drift; in the oceans and the clouds, spoiling their wet happy melodies; in the soil and the turf, poisoning their deep restful peace.

It is the Humans.

I know, my brothers, that many of you do not agree with me. Many of you, I know, do not see them as I do, these sons and daughters of Terra with their machines and their Thrones and their ever-continuing raucous jabber. Most of you do not concern yourselves with the Humans. Many of you feel that they are not truly sapient, that they do not have enough sense of the Inner Voice to *cause* any discord in its melodies. You are wrong. I live in their midst, not a dozen Hlutr-lengths from one of their cities, not eight hundred parsecs from one of their most populated worlds, and I know: this dissonance I feel comes from them.

Still more of you, my siblings, feel that the Humans are sapient and feel a special compassion for them, silly and weak as they are. You may remember our dealings with them, and our strange brother who left Amny and went to the world where the Humans live. I think of him always as "The Traveler," for he went places where Hlutr seldom go.

The last remnants of his carcass stand yet, in the clearing only a Hlut-length or so from me. He had been specially-bred for his mission, and he burned out his stunted life in a very short time. But his memory lives on, in all of us. It comes through our roots from the wet ground, it descends on us in the summer winds, and it echoes yet in the waves of the Inner Voice. We will never forget the Traveler . . . and I least of all. I was his Teacher; I bear some of the responsibility for his mission, for making him what he was. Sometimes, when I con-

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template the grand sweep of time, I feel that he is near, and I can almost hear his whisper. It is a sad whisper, a lost sound as he entreats us on behalf of those strange folk he came to love—as if a Hlut *could* truly love any of the Little Ones.

You remember our decision, in that time of judgement and the appeal of the Traveler. We spared Man, when we could have eliminated him from the Universal Song like the violent blight he sometimes seems. This was the will of the Hlutr, and this was my will too—and yet at times I wonder.

What did we know of Humans, then? Few enough of us had paid any attention to them. We had a few flashes of the Inner Voice, the knowledge we gained from the poor children of Nephestal, and the ravings of our misshapen brother.

It is so different now. We have lived with Humans on ten thousand worlds, for twice a thousand of their years. There is still little exchange between our folk, but some of us Elders have watched Man carefully, have listened to the song of his soul. And while we have found beauty, ever have we also found discord.

And now the Humans disturb Hlutr meditation.

I live more slowly, allowing night to blossom into day, day to fade to night, and the planet to move forward in its orbit. Usually this helps, for Humans are ephemeral and their disturbance does not last long. They cannot live slower than their accustomed rate.

Now, though, I find no peace in living slowly. The Human cacophony builds rather than subsides, and with each swift-passing day it grows worse. Soon all space cries with their boiling thoughts, their impertinent distress, their anguish. Soon the noise overwhelms the communion of the Hlutr, it stirs eddies in the waves of the Inner Voice, it brings violence to our quiet galaxy. Humans are screaming, Humans are dying, Humans are afraid—and worst of all, their little ones are crying.

I hear you wonder, my brothers and sisters: what is happening? You cast your thoughts outward, appealing . . . you who live on the worlds of Man open your senses, drinking in the sights and sounds of their tiny lives. Are they killing each other in yet another of their wars? Are they staining the stars with their blood, in a mad series of pogroms?

The answer comes, voiced by one of us who trembles at the magnitude of his news. A disease is taking Mankind, a disease that Human medical ability cannot reverse. In two short Human years, it has become a plague that engulfs half the galaxy and brings certain death to all it touches. Human lives are threatened, Human civilization totters, Human agony disturbs even the song of the Hlutr.

Is it any wonder that they cry?

And now the question comes, as I knew it would—whispered anonymously on the waves of the Inner Voice, spoken secretly to the winds of Amny, welling up from the soil with the memories of the Traveler: what should the Hlutr do?

I ask you, my brethren—why should the Hlutr do a thing?

Compassion, says the memory of the Traveler, the one who came to love these Humans.

In the name of compassion, then,

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should we turn away from Hlutr tradition? When have we ever stirred ourselves to prevent the deaths of any ephemerals? But a few seasons ago as the Hlutr count time, the great lizards roamed Amny; when the swamps dried up and the ice came, when diseases took them by their millions . . . did we interfere then? When the subtle, beautiful fishes died, leaving the oceans to the coarser beasts who succeeded them . . . did we put forth our power to save them?

Not just on Amny, but on a million worlds in all the long history of the Hlutr race—how often have we stood between ephemerals and their fates? And how often have our attempts met with defeat? The vanished Coruma, the lost childen of Lavarren, the lovely singing trees of the Mehbis Cluster: all gone, forever.

You remember better than I, my brothers, my Elders. The Hlutr have watched many races die, watched with compassion; but we have not interfered. It is not our way. Should we do so now?

We have pled for interference before, you say. In ones and twos, some of you have asked for this or that race to be spared. Some of you have tried, in defiance of the will of the Hlutr—and all have failed.

Why should we try now?

There is among us here on Amny a youngster, barely a sapling; she stands near the old Human settlement, at the place where they still bring their disturbed children, their adults with defective brains. *This* we do for the Humans . . . we care for their insane and their defectives, we comfort them with soothing projections of the Inner Voice.

The sapling calls for us now. Her message comes through the First Language, on waves of color racing through the Hlutr grove; it comes in the gentle soughing of the Second Language, a muted sound like the distant sea. "Elders," she tells us, "A Human calls for you."

"For us?"

"He uses the old equipment, and speaks to me in pidgin First Language on luminous screens. He asks to address our Elders."

I tremble in the wind. Is there no end to Human audacity? First they shatter the peace of Hlutr meditation; now one of them demands an audience?

Compassion, Brother, the memory of the Traveler tells me.

Sooner or later I must deal with the Humans; I decide it will be now. "Send him," I tell the sapling.

Before the man arrives, he is heralded by the other Hlutr. Broad waves of contrasting color move through their leaves and across their trunks, and when he enters my glade he is accompanied by the swishing of a million Hlutr leaves.

He is a small creature, even for a Human; his sparse fur is ashen and his artificial hide a dirty white. He stops before my trunk, then raises equipment designed to generate lights that mock the First Language.

The memories of the Traveler have prepared me; I bend my lower limbs to the ground, and I vibrate their leaves in controlled patterns, far faster than usual. The technique is difficult even for an Elder like myself, with full control over my body. We use it to communicate with the lesser orders in their own familiar languages. I do not intend to set

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the Human at ease; rather, I wish to show him the abilities of the Hlutr from the very beginning.

"Who are you, Human?"

He bows. "I am Doctor Alex Saburo, of the Credixian Imperial Navy."

This tells me little. His name is a sound, nothing else. His title indicates one who is accorded knowledge and wisdom, as Humans know it. As for his affiliation, not even the Ancients of Nephestal are able to keep track of ever-changing Human political systems.

"Why do you come before me?"

"To ask for help."

Up close, it is easy to read these creatures through the Inner Voice. The tenor of his emotions matches his voice: firmly controlled, yet aware that he stands in the presence of a vastly superior being.

Emotions, but their minds are not coherent enough to project thoughts. "Ask, then," I say.

"The Death," he said, spreading his upper limbs. "We can do nothing to stop it. It's infected half the Galaxy, and it's entered the Imperium. In another year it'll have spread to every Human world." His control wavers, and I glimpse emotional storms beneath the surface of this man's mind.

"So you come to the Hlutr for help. Why?"

"Where else would I turn, Your Greatness?"

"You may address me as 'Teacher.' "

"Our medical science cannot cope with the plague, Teacher. I know that the Hlutr have the ability to modify the very genetic code itself; I know that your Elders have the intelligence to analyze the Plague and perhaps stop it."

So the Universal Song mocks me, my brethren. I cannot evade the question that is whispered in the night: Should Hlutr help Humans?

I appeal to my own Elders for a decision, and they are strangely silent. It is I who began this thing, two millennia ago when I prepared the Traveler to judge Humanity, when I came before the Elders to say that we needed to know more of the children of Earth. Now it is *I* who must decide whether we will spare Mankind in this time of crisis.

Although the Traveler's memories beat strongly within me, how can I say yes? How can I throw off geological ages of Hlutr tradition, all for the sake of a brutish creature who thinks himself grand because he can disturb our meditations? How can I justify saving *this* people, when we have allowed so many others to perish?

The man is waiting for an answer; and suddenly, I have one for him. "You ask much of me, Doctor Alex Saburo. Perhaps too much." I tell him of our traditions. I tell him of the Coruma, the Lavarren, the Mehbis folk. I tell him that all living creatures—yes, even the Hlutr—meet death, that it is part of the Universal Song. In the end, my twigs ache from making such precise vibrations for so long.

"Teacher, I have heard that the Hlutr value life. Old tales tell of their compassion for all Little Ones. For the sake of that compassion, won't you help us?"

"We are compassionate . . . but you do not know what you ask. You Humans occupy over twelve thousand worlds; within one year, all will be stricken with your Death. You ask that we create a

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defense, then that we sacrifice ourselves to spread that defense on all your planets . . . ?''

''The sacrifice would be great—but without it, my civilization, perhaps my entire race, will die.''

''The sacrifice is greater than you think.'' I groped in the vast collective Hlutr memory for the Human words I needed. ''You think we Hlutr can synthesize genetic material without effort. Know then, Doctor Alex Saburo, that when a Hlut makes new DNA and RNA, that Hlut dies—violently, in a bursting that spreads the new material on all the winds. Even if we *can* save your people, to do so means that many times twelve thousand Hlutr must perish in agony.''

A brief torrent of anger, quickly suppressed, flashes forth in the Inner Voice. ''I had not thought,'' he says, ''That the Hlutr were so selfish.''

''We have our duty to the Universal Song. If that melody declares that Humans must pass away, we cannot gainsay it.''

He is an odd creature, in whom passion and reason can coexist, each as forceful as the other. Now he touches my trunk, and the warmth of his hand surprises me and moves me in a way his words have not. ''If you wish, Doctor Alex Saburo, the Hlutr can offer your people counsel. We can help you prepare for the Death, can make it easier for you to meet your end. We have done this for others.''

''No.'' His denial is strong. ''I thank you then, Elder, and I beg your permission to leavė. There is little time.''

That should be the end of it—yet it is not. ''What will you do, Human?''

''I'll seek an answer. Somewhere, someone must have the knowledge that will help me to end the Death. As long as I can, I'll keep searching.'' He turns, and begins the slow walk away from my grove.

There is an outcry from some of my brethren, a gentle protest that falls from the stars like cold Autumn rain. From within me, where the memory of the Traveler lives, there is a stronger objection.

Brothers and sisters, how can I yield to you? How can I deny our traditions? You are but a few—and when the Hlutr act, they must act in agreement.

How, you ask me, can I ignore the pain?

''Wait, Alex Saburo.''

If for nothing more than the sake of the Traveler, whose spirit gnaws at me, I make the Human an offer. ''I will go with you.''

''B-but how? I will travel beyond this world, to planets where the Death has hit.''

I do not know, my brethren, why I agree to do a thing that the Hlutr seldom do. Perhaps I, too, am overly fond of these Humans. Perhaps I want to find something in them that would be worth the death of a hundred thousand Hlutr. Perhaps I am simply reluctant to waste all the time I have spent studying them. ''The Human children on yonder hill are mentally defective, yet they are strongly sensitive to the Hlutr Inner Voice. One of them shall become my operative—it shall accompany you, and I will see what it sees, hear what it hears, and communicate with you through its mouth. I will also sing with my brethren and my Elders, and perhaps . . . perhaps we will find a way to help you.''

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He is flabbergasted; both the power and the mercy of the Hlutr are beyond him. "Go back to the sanitarium," I tell him. "My operative will greet you there."

'I . . . thank you, Teacher."

His words are echoed by the voice of the Traveler within: *Thank you.*

The body is awkward, soft, confining. Through its limited senses, I perceive a truncated world: vision spans merely one octave, and the threshold of hearing is far above the quiet susurrus of the Hlutr Second Language. The Human chemical senses show more promise, yet the body does not know how to properly interpret them.

There is no mind, no awareness of identity. If such ever existed, it is buried too deeply for even the Hlutr to find. Although it wears an animal body, the creature's soul is more like the lesser plants. It has life, it responds to its environment, but it has no volition. Until I animate it.

Motion, that is the most difficult thing. The Hlutr move slowly—swaying with the wind, making tiny ovals in sympathy with the yearly movement of the sun, pulsing our rhythms of growth and life with the music of the Inner Voice. We are not accustomed to the rush of animal motion, and it takes me a time to become comfortable as the new body walks.

I have not animated a body for Human millennia . . . not since I attended conferences of the Free Peoples of the Scattered Worlds in borrowed Avethellan form. Slowly, the process comes back to me, and I am more confident. The raucous Human voices do not sound so harsh, the claustrophobic Human rooms begin to seem less close.

While I am adjusting to the change, Alex Saburo leads me to a transport capsule, and in minutes I am in the Human city. Confusion and disharmony fill my senses, and I simply withdraw my attention from the body. I sing with the winds, I feel the happy touch of flying beasts upon my limbs, I dig my roots in the cool earth and inhale nutrients from the brisk air. In time, Saburo and my operative reach the spaceport; after a few moments of disorientation they have left the surface of Amny and are speeding out into the dark, peaceful gulfs of space.

Now at last I can return to the body, can begin to bring my Human operative completely under control. I concentrate, matching my time sense to the fast, inflexible Human metabolism. The world of my experience narrows in concentric circles, until I bid temporary farewell to grove, earth and winds and open my eyes on a small spacecraft lounge. I am upon a divan before a wall that mimics the sight of naked space; Saburo sits next to me, watching instruments in his lap. When I stir, he looks up.

"Teacher?" He asks.

"I am here, Saburo." my voice . . . my *Human* voice . . . sounds hollow in Human ears.

"We'll be shifting into tachyon phase in a moment," he says. "We've been under way for just under two hours; it's almost ten hours since we left your grove."

I shake my head. The animal attitude toward time is very hard for Hlutr to grasp. Everything is impatience, everything is motion. We who count time by

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the movement of stars and the seasons of slow Hlutr life, we have difficulty binding ourselves to rigid Human concepts of interval. "I have the Human body under control now," I assure him. "I long to experience your tachyon drive. It is a thing that Hlutr seldom endure: to travel nearly as fast as the waves of the Inner Voice can move."

"Will you be able to maintain communication with . . . your host?"

"I feel confident that I can do so. Our minds are much more flexible than you believe." Indeed, the change comes even as we talk; the Human ship twists in a direction totally unknown to Hlutr, but I do not lose contact with my operative. My awareness has taken root in the alien animal brain cells, and it will not be dislodged easily.

"What is our destination?"

Saburo sighs. "First, to Taglierre, to stop in at the Credixian Medical Association convention. I don't expect them to have any more leads than they did when I was there last week." He spreads his hands. "After that, I guess it's on to Eironea to consult with the Grand Library."

"I do not know these places."

"We're flying to Galactic West; from Amny, roughly in the direction of the constellation called Aurick's Tower." He touches a few keys on a panel, and the wall shows Amny's night sky. He points toward a particular grouping of stars. "Here."

Nodding comes almost as easily to me as the azure hue by which the Hlutr signal assent. We move in the direction of sad, bright Dorasc. Even now I hear the song of my brothers and sisters on Dorasc's starbright plains, and I sing with them. The song is distorted: in part because of the tremendous speed at which the vehicle moves, but in part also because of the wails of a billion Human voices. And somewhere, between here and distant Dorasc, the cry of a single Human child cuts across the harmony of the Inner Voice like thunder across a peaceful Summer afternoon.

Ere I have begun to probe the nature of that dreadful cry, the ship twists again, returning to normal space. Before my Human eyes is the cool, white globe of Taglierre.

Scarce two sevens of Galactic Revolutions have passed since Hlutr seeds first came to Taglierre. In that time, the planet has grown steadily more inhospitable, slowly getting colder as it leaks its atmosphere to space. Human terraformers have arrested the process, and for now Taglierre has an air blanket two-thirds as dense as Amny's and temperatures no worse than the deepest winter of my home. Yet Humans will not stay forever. Seventy times seventy Hlutr remain, proud and lonely in the tropics; within their lifetimes Taglierre will become a frozen ghost of a world.

As we jockey for an approach pattern, I greet these lofty brothers and sisters, who have the honor of presiding over the death of a world. They work their works well, as the generations progress . . . urging the Little Ones along, nudging them now and again when their normal evolution does not keep pace with Taglierre's dissipation. When their efforts are successful, life will survive on this globe; yet the struggle is a hard one. They sing me ritual greeting, but pay me little attention otherwise; the

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doings of Humans are their least concern.

Still, from their song and the eddies of the Inner Voice that lap the shores of this planet's waterless seas, I glimpse loneliness and despair in the once-teeming Human cities, and I know that the Hlutr are not the *only* ones waiting for a world to die.

"Many of your people have left Taglierre," I say to Saburo.

Discarded memories in my host's brain tell me that Saburo's wrinkled face is sad. "The Death will be here soon—within weeks, probably. Everyone who can leave, has. Only military ships can land safely; the poor fools will stampede themselves trying to steal anything else."

"Why do they not prohibit travel, thus containing the disease?"

"On Taglierre? They depend on trade for food and repair parts. That world can't support a half-billion people on its own." He runs a hand through his white hair. "We've done what we can. The Imperator ordered the boundaries closed a year ago—so the Imperium escaped for a while." The ship cuts through air, leaving a brief flash like the trail of a meteorite visible to Hlutr below. "But we can't stop interstellar trade. The Death has entered the Imperium now, it's only a matter of weeks until . . ." He does not finish.

We settle to a desolate landing field, while cold sand blows across the empty plain.

These are Human Elders and wise ones? I came to Taglierre, my brothers and sisters, convinced that I would witness something like a council of Hlutr, all joined in the swaying and the song as they contemplate mysteries and seek for answers. Instead, I have fallen into a madhouse!

Listen to them, my fellows:

"The Death is a prion-based disease; my simulations make an analogy with the treatment of Gerstman-Straussler syndrome," says one of them, a tall and slender woman with hair the color of the Springtime sky. "Thus, your attempt to modify DNA-based antiviritics shall fail no matter what starting point you use."

"*My* computers," says another from a communications screen, "Assure me that there are no effective prophylactic measures. We can only treat the disease after it is manifest—and that treatment relies on massive doses of general-series antiviritics."

"You are wrong," shouts a third, ludicrously holding up his computer display for all to see. "The analogy must be two classic toxic reactions. The only way to stop this scourge is to spread organisms capable of breaking down the toxin. I suggest that we allow our linked medicomps to write a simulation involving a gengineered variant of current antidote-antibodies."

The meeting hall, although large, is mostly empty. The doctors—the Human Elders—sit or stand near the center, each of them without exception behind a computer terminal. Saburo and I sit with a few quiet visitors on one side of the chamber. On the other are the members of the press: frightened or confident, they do not understand what the doctors say, yet they feel that these idiots will find an answer. Billions of Humans watch the proceedings through

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their eyes and their instruments, billions who see the doctors as wise seekers of knowledge. Am I the only one who recognizes them as fools?

No. For Saburo rises to speak.

"My God, you've been here for two months and you're still having the same arguments. Still linking your medicomps to your diagnostitrons and running simulation after simulation. I don't believe it."

The tall woman looks down her nose. "If it isn't Doctor Saburo. Or should I say, *Lieutenant* Saburo?"

"Brevet Colonel for the duration, Doctor Melus. I've never tried to hide my connection with the Navy."

"No." She smiles. "You just couldn't find any school or reputable hospital that would put up with you. So you think we're wasting our time?"

"I do. Simulations and computer analyses aren't going to stop the Death—"

"Oh, and I suppose you will? How? Your habit of playing about with corpses hasn't yielded any results, nor have your excursions into vivisection. . . ."

"Legitimate experimentation, if you please."

"Have it your own way. I don't see any cure from your latest brainstorm of appealing to aliens, Lieutenant."

Saburo clenches his fists, but says nothing.

The woman dismisses him with a wave. "Here we have gathered in one room, the greatest expert databases in the Imperium and beyond. The Universities of Skapton, Prakis and Credix itself are tied into our network. We have the wisdom of the ancients, in the form of the programs they left us. This convention has brought together the greatest resources of medicine in recorded history—"

"And you'll still be running your simulations and consulting the ancients when the last of you drops dead from the Plague!" Saburo takes the arm of my operative, draws her toward the door. "Come on, I should have known better than to stop here."

As the door slams shut behind us, the Human doctors begin again their comparison of the results of mindless computer programs.

No wonder they are dying.

On the way to Eironea, we pass warships—Saburo tries to explain to me why Humans have been killing one another, but I cannot comprehend. We Hlutr are all one tribe, since the time of the Great Schism more than a billion years ago . . . we do not fight among ourselves for territory, nor do we seek vain power. The Hlutr are united in the songs we sing and the Universal Song of which all are part; even when we disagree (as some of you, my brothers and sisters, disagree with me about helping the Humans), we do so without rancor, malice or violence.

And what need have the Hlutr to fight with the other orders? When they menace us, they are dealt with; otherwise, the Hlutr conquer as they have always conquered, in the slow yet inexorable fashion of the plant kingdom. Why should we fight?

"Your warships sit idle, Saburo. Why do they not fight?" For though ships from both sides challenge us as we pass, there is no hospitality along

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a border that stretches for a kiloparsec in every direction.

He manipulates his keyboard, stares into a small screen, then shrugs. "The Death. They've declared a truce for the duration."

"Yours are a strange folk, Saburo."

Now he does a thing which convinces me that none of the Wise will *ever* understand Humans, a thing that makes me withdraw for a time to my quiet grove and the fresh dew of a misty Amny dawn.

He laughs.

In due time we come to Eironea, and reluctantly I return from Amny. Your attention is on me now, brothers and sisters, and on this strange journey which has become my mission. Some of you sing of our obligation to save the Humans; others sing that we must maintain the precious Hlutr detachment that has served us since the far-off days of the Pylistroph, when Life was but a dream in the Scattered Worlds.

And others . . . others breathe a different opinion, born of smothering hatred and cold revenge. *These* Hlutr rejoice at the Death, and would have us hurry it along so that Humans can be wiped out once and for all.

Have you forgotten, brethren, that once the Hlutr swore to aid Mankind in his quest for maturity, his fulfillment of his potential? Saburo may succeed, despite us—Humanity may survive the Death without Hlutr aid. Will you then have us slay the survivors, cast this people out from the Universal Song? Would you have the Hlutr forsworn before the stars and the sacred melodies?

What the Hlutr do, we shall do in full agreement. Nay, my brothers and sisters: for now, Man will make his own destiny, and the Hlutr . . . the Hlutr will watch.

Our ship enters normal space, and we drop toward verdant Eironea. The Hlutr of this world, who live mainly in rich, wet tropical forests, sing me welcome and concern in the Inner Voice. Theirs is a song tinged with despair; the Death has come to Eironea, and Humans have died: seventy times itself four times and more of them. Ten times that many are near death, and their despondency shakes the planet. These Hlutr are fond of their Humans; they cry sadness to the unfeeling stars at the passing of their Little Ones.

We land on an untenanted field near one of their great cities, as the sun climbs slowly toward zenith and shadows pool beneath buildings. A drawn Human face appears on the wall: the commander of our ship.

"We're down, sir. If it's all the same to you . . . er . . . the crew has voted to remain shipboard. Your cabin connects directly to the main airlock; we'd appreciate it if you'd . . ."

Saburo raises a quivering hand. "I understand, Commander. Rest assured that we'll remain in our sealed area of the ship."

"Very good, sir." The face disappears.

With a heavy sigh, Saburo stands. "Come with me," he says.

"What is our destination?"

"The Library." His tread is heavy, his body stooped like a tree that has seen too many harsh winters.

I can do nothing but follow.

There in the empty streets of the city Shiau Shi on the planet Eironea, Saburo

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tells me what the Humans have done. Let me share this with you, brethren, for it is a marvelous thing.

Like the Daamin, the Kreen and the happy children of grand Avethell, Humans gathered together in one place all their knowledge of the Universal Song. This was in the days of their great Empire, fifteen hundred years ago. Once, every Human world, settlement or starship in the Galaxy could access this knowledge; today, only a few outposts remain in contact with the central Library. Eironea is one of them. Here, in the care of a devoted priesthood, the machinery is available to all who need it. Through the political upheavals of nearly seventy Human generations, Eironea has remained free, unconquered and neutral, guarding its precious treasure.

The network of transit capsules is not working, and no auto-taxis answer Saburo's summons, so our ship gives birth to a small vehicle and we travel in this metal shell. Humans watch us as we pass, hidden in their buildings or behind directional signs and structural members; the few whom we catch in the open scurry for cover as soon as they see us.

The Temple of Knowledge soars above us as we disembark; Saburo makes his way to a row of waiting computer terminals; their screens remain dark.

I sense another Human presence behind us, and turn to see a pale, emaciated woman dressed in a tattered frock. Her long hair is the black of space, and her eyes hold Springtime green.

"If you're here to consult the Grand Library," she says in a thin voice, "I'm sorry, but you won't have any success."

"The machinery doesn't work?" Saburo asks.

"It works fine. There's no one at the other end to answer." She spreads her arms, a sapling opening to the sun. "The Library staff was hit hard by the Death; we last heard from them months ago." Her lips form a weak smile. "Come to my quarters, I'll give you some tea. We might as well be comfortable." She introduces herself as we follow. "I am Yee Bair. And you?"

"Doctor Alex Saburo. My companion is the Teacher. Do . . . did you work here?"

"At the Temple? Goodness, no. I was a frequent customer." She pauses to cough. "After the Death hit and the priests either died or moved away, I figured, why not move in? It's a lot nicer than my two-room flat, and I have plenty of time for my work."

Something sings in her, just the briefest flash of an incomplete melody in the Inner Voice. "Your work?" I ask.

"I'm an artist." She pauses before a closed door, presses her palm against it and it slides open. "Here, look."

Yee Bair makes pictures with light —raw, vibrant pictures that distort reality as seen through Human eyes. Some of her works are tame, gentle scenes of towers, spaceports and lounging Human beings. Others feature scenes of the Death, and they breathe with the fear, anguish and defiance that radiate from Human worlds in these terrible times.

"You're a genius," Saburo says.

In spite of myself, I nod. "You give form and definition to a bit of the Uni-

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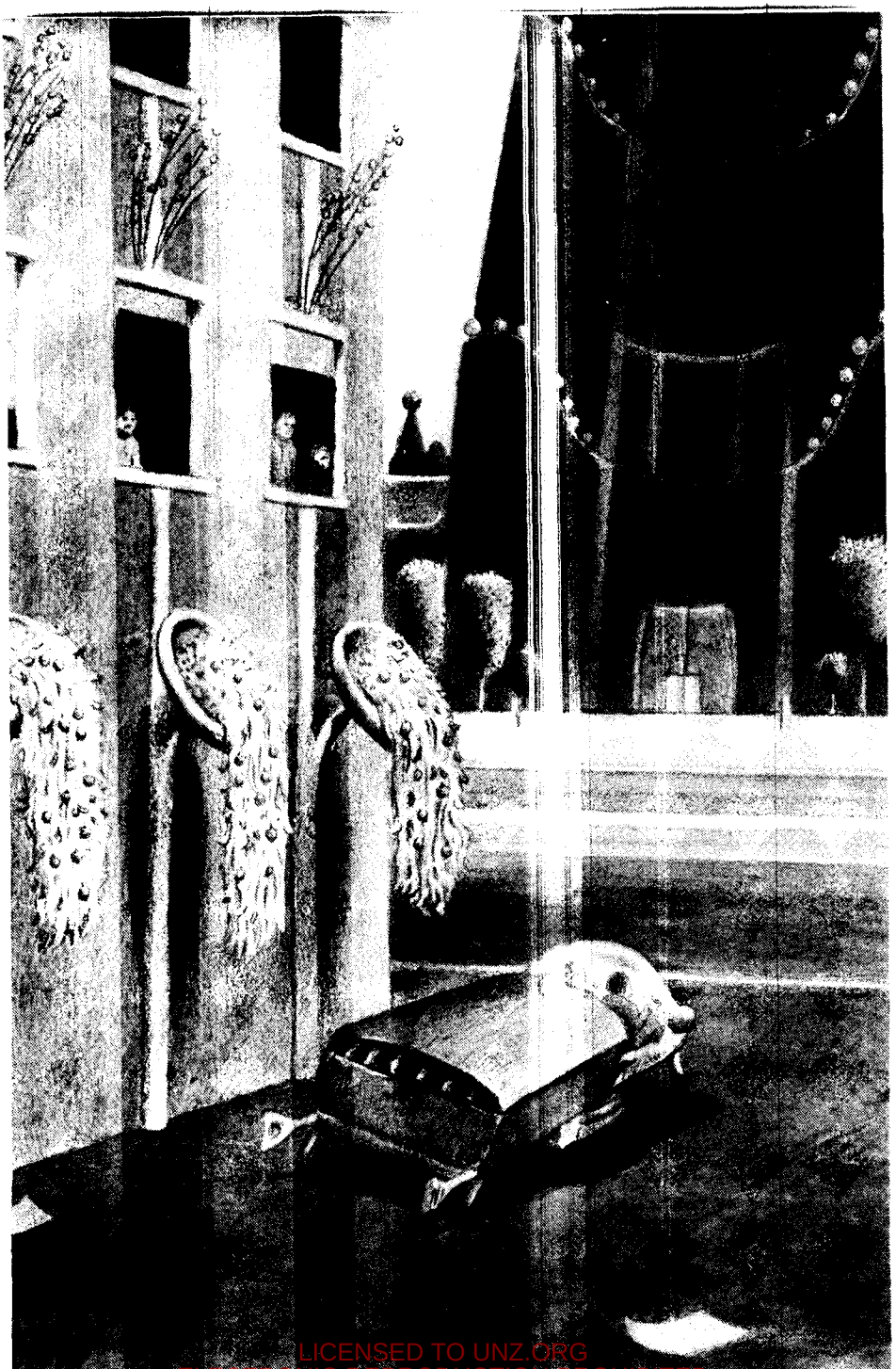

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versal Song. Your work ranks with the greatest of your people."

"These were early attempts," she says, pointing out the tame visions. "Before . . ." she does not finish, but busies herself with the tea.

This is the mystery, brothers and sisters, that we have faced before and will face again in a thousand different races. We, whose only artform is the substance of the Universal Song itself—we cannot capture its essence in the way that these Little Ones, these animals, can. We who are masters of creation are also its prisoners; we cannot step beyond it to create things that cannot be, to see things that cannot exist. We who never know the fullness of despair that these creatures feel, will also never know the urge that pushes them beyond despair's limits. The ecstacy and the pain of a Hlutr in the final death-blast, imposing the will of our folk on the malleable genetics of reality—this is the closest we poor Hlutr can approach the emotion that Yee Bair feels whenever she picks up her light-wand.

Should the Hlutr cry then for Humans, as they face the terror of the Death—or should Humans cry for us?

Human pain rips across the Universal Song, and for a moment my Human brain aches with that plaintive cry. Somewhere, nearer than ever, a Human child is crying as none has ever cried before. Soon, no Hlutr will be able to ignore that cry.

Saburo gives a noiseless whistle of awe, and my attention is drawn to Yee Bair's current work.

She has given form to this child's cry that echoes from star to star.

It is a scene almost as the Hlutr might see it, a million colors overlaid one atop the other, a jagged slice of vision that oozes with raw pain. Human eyes and brain must study the picture to see what it represents, but I *know* even as I glance at it. A Human boy-child wails, surrounded by the dead bodies of seven times seventy Human adults. Behind him, dimly seen, are the figures of other races who watch the Human tragedy: the wise Daamin, the sad sons of Metrin, the compassionate Iaranori who even now struggle to bring relief where they can . . . and the Hlutr, proud and tall in our distant sympathy. And beyond us, even the cold unfeeling stars rain tears of light on the child. The picture brings tears to my borrowed Human eyes, as the cry it represents could not.

The stars . . .

I touch Yee Bair's arm. "These are the stars of Eironea's sky, no?"

"Yes." Of course they are. How could one who is so attuned to the waves of the Inner Voice, avoid hearing that call of agonized loneliness? And hearing it, how could she not know from whence it came?

"Show me . . . show Saburo . . . where those star-groupings lie."

Why am I doing this thing? Brothers, sisters, what is the fate of one Human child to me? Some of you ask me that question, and I cannot but wonder with you. Yet others—the voice of the dead Traveler among them, he who knew Humans better than any of us—others sing to me that a Little One is in pain, and the Hlutr must answer. If only to still the pain with a merciful stroke. This is our way, our purpose, our duty since the first Hlutr raised itself above the soil of forgotten Paka Tel.

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Yee Bair describes the area of the sky, and Saburo relates it to galactic charts in his computer terminal. When he is done, he looks at me, his face filled with questions.

"Take us there, Saburo."

"Why?"

I ask myself the same thing, brethren, and receive no answer save that which I know already: a Little One is crying. "It is in the Universal Song," I tell Saburo, hoping that will content him. And it does.

We share tea with Yee Bair, then return to the ship. Saburo must be desperate, his last chance flown away in the empty halls of the Temple; he gives orders quickly, and soon we are climbing from green Eironea into the black of endless space.

On the way, Saburo coughs a few times, then turns away from me.

"Tell me of the Death. How does it come upon your people, and what do they feel when it strikes?"

Eironea is far behind, the crying Human child still lost in the stars ahead of us. Saburo looks up from his computer and frowns.

"Sometimes it comes quickly, and death follows in a few days. In other cases it can take months to develop. The symptoms vary: coughing, headaches, difficulty breathing, swelling in the joints—then pneumonia, vitamin deficiency, nerve disfunction—if the patient lives long enough, total disruption of the immune system and advanced malnutrition."

"None escape?"

"Some who caught it nearly two years ago, at the beginning, are still alive . . . but still infected and still showing symptoms. We've never had a case of someone exposed to the disease who didn't catch it, or anyone who recovered from it once infected."

"And your science cannot prevent the spread?"

"That fool Melus was right about one thing—it's a prion-based disease. No DNA. We haven't even been able to isolate the infectious agent, much less counter it." His hands twist hopelessly in his lap. "As long as our doctors continue to play with computer programs left over from the ancients, we'll never make any progress."

I look out at the swiftly-moving stars, and I listen to the eddies of the Inner Voice as it moves between the worlds. And I wonder. Where did this plague come from?

Some say that it is a natural outgrowth of evolutionary systems that contain Humans. A variant of diseases known to Mankind even before he ventured off his home planet. This is indeed possible; Life's ingenuity knows no bounds, and other such diseases have developed in the long course of Galactic history.

Others say that the Death was artificially engineered as a weapon against these people—either by Humans themselves, or by one of the malevolent races of the Galactic Core. This theory, too, has its antecedents; this will not be the first time a promising race has died in biological suicide . . . or been victim of the Gathered Worlds.

Some even say—although not in words—that the Death was started by the Hlutr. I have sung the question in the Inner Voice, casting suspicions out

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into the starry night, but I have received no answer. No one admits, and yet . . .

One cannot but have suspicions. The Death is said to have started on Laxus, a planet not too far from the very Earth upon which these Humans sprang. The very Earth on which the last descendants of their own Hlutr choked to death on Human poisons. Often I have contemplated the infinitely sad story of the Redwoods, often I have wondered at their stunted lives: only a shadow of what they could be, what their distant ancestors had been; blind, dumb, all but deaf; hearing only the barest echoes of the Inner Voice, while all around them ranged the awesome and beautiful symphony of the Hlutr singing each to the others. The Redwoods were not Hlutr, at best they were only a kind of degenerate Hlutr kin, leftovers from a damaged line that had never been able to sing the Inner Voice. Their minds, what minds they had, must have been twisted beyond all recognition; their pitiful short lives must have been an agony.

And the Traveler within me whispers at these times: although they did not know it, did Humans do a merciful thing when they allowed the Redwoods to die?

And we Hlutr—what is the course of mercy for *us?* To allow death, or to deny it? Even if it is a death that some of us might have caused . . . ?

The ship shudders, and comes out of tachyon phase in the shadow of a huge banded gas giant.

"What now?" Saburo says.

The Commander answers, his face appearing ghostly over the magnificent view. "Refueling stop, sir. Settlement called Kef. Hope you don't mind—it's the only place on our charts that has a treaty with the Imperium."

"Carry on." Saburo turns to me. "I hope you don't mind."

"No." I reach out, calling for Hlutr—there are none in this planetary system, none for sevens of parsecs. We move, and a shrunken sun rises over the orange limb of the gas giant; light glitters briefly from a narrow ring of ice particles.

No brothers, no sisters—only the pulse of nearby Human life, a distant echo that might be some form of developing plant life on a rocky worldlet close to the sun . . . and the slow, incomprehensible hum that comes from the crystalline Talebba, a race whose existence Humans do not even suspect. The Talebba go their own way, living out their geological lifespans in planetary rings, asteroid belts and the clouds of primordial stuff that hide from stellar heat out where space is nearly flat and their own sun but another bright star. Now and again one of them dies, flaming, as it topples toward the inner system; occasionally one of these survives long enough to impact on a planet, and possibly create a new race of rocklike intelligences to succeed it.

I do not greet the Talebba of this system. To do so, I would have to live nearly as slowly as they do, and to them Galactic Years are like the days and nights to other creatures.

Saburo is consulting his computer; he grins. "Kef is a settlement in orbit around this gas giant, and something of a leader in local trade. I'm hoping they'll have charts that might help you locate whatever you're on the track of."

"I do not know." The Inner Voice

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is, for the moment, undisturbed. The song of the Hlutr sounds in lonely splendor, untouched by the cry of Humanity. The child is sleeping . . . or dead.

"There," he points, and Kef swings into view.

It is an untidy thing, a construct of glass, metal and light that resembles a bird's nest as much as it does a spaceship or Human city. Around the whole assembly is a ring of violent red, so bright that it hurts my Human eyes. Suddenly a loud klaxon rings, making both Saburo and I start.

"What is it?" Saburo says.

The Commander replies, "We're getting a transmission on the emergency band. I'll put it on your screen."

The Human face that greets us is gaunt and wild-eyed. "Turn back," the man croaks through dry lips. "Docking permission is denied."

"We are a ship of the Credixian Navy, on a refueling stop—"

"For your own sake, keep away. Do not pass our circle of quarantine. Don't you understand? *We've all caught the Death.*"

Saburo shakes his head. "We've already been exposed. We just need fuel, and a look at your charts."

"No." The face is sad, but hard with unbending determination as strong as Hlutr bark. "There's hydrogen enough in the atmosphere of the gas giant—you're a military ship, you can refuel with ramscoops. You can tie your navicomp into our central computer if you think our charts will be of any use to you. Just stay away."

"I don't understand. If you're already infected, how do you think we can make it worse?"

The man shakes his head. "By carrying this thing elsewhere. We all took a vow, destroyed our ships, set up the circle to warn others off." His eyes plead with Saburo as his hollow voice cannot. "We're ready to die . . . but we're not going to take the rest of the Galaxy with us. Go away, please—before you tempt us too far."

Saburo nods, touches the intercom. "Take us into a dive, Commander. We'll skim the atmosphere and then get on our way." He turns back to the man from Kef. "I understand. We're leaving. G-gods be with you."

"Gods be with us all." The image fades, and red-ringed Kef falls behind us until it is lost in the stars.

"The poor fools," the Commander says.

Tight-lipped, Saburo shakes his head, but says nothing. Soon we are in tachyon phase again.

Certain of my brethren sing the courage of Kef in the Inner Voice, determined that such heroism should not be lost to the Universal Song. And who am I to deny them? More and more Hlutr join this song, more and more regard me and the progress of my journey; not just saplings and adults, but Elders as well. And now, for the first time, I feel the chill touch of the attention of the Eldest of all, from her vast island in the Secluded Realm. As yet, she pays only the slightest heed, just a hint of scrutiny.

This matter is becoming far more important, my brothers and sisters, than I ever intended.

Now, as if aware of the presence of so many Hlutr minds, the Human child shrieks again, splintering the mass concentration of the Inner Voice. For all

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that this cry tears at my soul, I welcome it: I am not too late to help.

If I can help at all . . .

In the end, I enlist the aid of the Hlutr of Telorbat and a dozen other worlds within a kiloparsec. That the Human child is somewhere within this volume of space there can be no doubt; no Hlut can mistake its anguished wail. At my direction, the Hlutr listen closely, then each tells me the direction from which the cry comes. I mark these on Saburo's master charts; we wait for a few hours, then we try again.

This is exactly the sort of work at which animal intelligences excel: the splitting of time and space into tiny bits, the measurement of direction and duration. With computers to do his calculation and Kef's star charts as a basis, Saburo manages to pinpoint the source to within a few billion cubic kilometers. The size of a planetary system, and in an empty volume far from any planet! Are we mad to think we can locate the child?

No.

The emotion is unmistakable as the echo on a radar screen, and in Human hours we have located the center of the disturbance that called me from Amny seven thousand parsecs away. A lone Human starship floats powerless in starry space. Saburo is taken by a coughing fit, then gains control of himself. "Commander, take us in. Dock with that ship."

"They don't answer our challenges, sir. I think it's a ghost ship."

I shake my head. *Something* is alive aboard that dark hulk.

"Just follow my orders," Saburo says evenly. The Commander shrugs, and turns to his control board.

Soon the ships are mated together, and Saburo and I stand before a closed hatch that leads to the mystery vessel. I do not know what to expect; seventy thousand times seventy Hlutr, and more, watch with me as the door slides back.

The sight, the smell, the sound we experience is something that no living being should ever face. Saburo, retching, falls back; even some of the Elders turn away from that terrible scene.

The ship—a cargo vessel—is crammed with dead, decaying Human bodies. Most of them show the ravages of the Death: flat, empty stomachs, the agony of death, the trace of fluids on faces and chests. It is indeed a ghost ship, one inhabited by victims of the Death. Or so we think. Only when we blast into the sealed control room, only when we inspect the destroyed panels and recover the damaged log, do we find the truth. And when we find that horrible truth, it is *my* cry that echoes in the heavens and disturbs the Hlutr at their meditation.

We may never know the home planet of that charnel ship, for all references were carefully edited out of the log. Only the record of their deeds remained, as if they were actually proud of what they had done.

Over seventy times seventy times seventy Humans were put aboard that ship: more than four hundred thousand bodies. And more than half of them were still alive. The unknown rulers of that unknown world herded all the victims of the Death, along with their families and friends, along with the doctors who tried to treat them, along with the

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ministers who tried to comfort them—herded all into that vast cargo hold, then sealed them off and set them on a journey to nowhere. The controls were set to destroy themselves after a certain time in tachyon phase; after which, the ship dropped back into normal space and floated aimlessly, a macabre prison that offered no hope of escape.

There the tragedy did not end . . . for somewhere in this ship, a Human child still cries.

It is Saburo who finds him, huddled in a curve of the hull with corpses pressed tight around him. The boy is naked, filthy and starved; he draws back with a scream when Saburo reaches for him.

"Let me." I step forward, and call on all the Hlutr to help me. All Human children are sensitive to the Inner Voice, this one more than most: we join in a song of reassurance, of peace, and the boy falls silent. I lift him, and Saburo leads the way back to our own ship.

His name is Ved, and he does not know where he comes from. As I probe his mind, I sense a good deal of damage; he builds walls against the terror he has experienced, and I am loath to disturb those walls. Later, in the care of Hlutr specialists on Amny, perhaps Ved can be brought back to full mental health; for now I am content to let him fall asleep to the Hlutr lullabye.

When I am sure that the boy will not wake, I face Saburo. For once, I feel something akin to animal rage . . . and I know that you, my brothers and sisters, feel this anger with me.

"You dare?" I challenge him. "You dare to crawl to the Hlutr and ask us to spare your race? To spare *that?!*" With one gesture, I indicate the charnel ship, the world that launched it, the people who committed this atrocity and all their brothers, sisters and cousins throughout the Galaxy. "Beg rather that we do not increase the virulence of the Death seventy-times-seventy-fold, to give your people the agony they deserve."

Saburo coughs, falls into his chair, then raises defiant eyes. "Is this Hlutr compassion?"

"The Hlutr do not waste compassion on beasts who have proven unworthy of it. We do not grant compassion to creatures who are incapable of showing it."

"Do you think *I'm* not sickened by what I saw today? Do you think I don't want revenge on those who did it? By what right do you condemn all of us on the basis of some who commit atrocity?" He turns to the intercom. "Take us to Telorbat. I need a planet with medical facilities."

"Our right comes from our nature. Our place in the Universal Song. The power that we alone possess." He bends over Ved's sleeping form, and I catch his arm. "What are you doing?"

"In dwelling on his tragedy, you obviously haven't noticed the most important thing about this child. The fact that he's alive."

"He lives—which is the core of his tragedy."

"You still don't get it. Look at him. *He hasn't caught the Death.*"

My Human body shivers. "After days . . . weeks . . . of exposure . . ."

Saburo nods. "He's immune. And if

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I can figure out why, we might have a chance to end the Death yet."

And if you do, Saburo . . . will the Hlutr permit it?

In confusion, I withdraw to Amny and the song of the Hlutr, while our ship races toward Telorbat.

I think too much like a Human; my sojourn with them has affected me. For Galactic Revolutions have I stood faithfully in my grove, while the patterns of stars and the very face of Amny changed around me, and I have sung the will of the Universal Song. I have earned the title of Elder and the name of Teacher. I have sung in the councils of the Hlutr, and have even advised the Eldest of all. Yet these Humans make of me but a newborn seedling, a foolish sapling facing his first Winter snows.

My brothers and sisters, tell me what I should do.

You sing, and I listen.

You will counsel me, you will give me reasons and opinions . . . but you will not decide for me. Some of you think the Humans should be saved, others believe they should perish—and still more of you think that we ought to ignore these children of Terra. Brethren, what am I to do?

Saburo, Ved and my operative arrive on Telorbat, and I am drawn to them once again.

It is the season of cold in the higher latitudes where the major Human city sits. You are there already, my fellows, rising snow-clad only a few kilometers from the city—for Ciudad Telorba rises like a vast pyramid from the midst of a great forest, and since Humans arrived on this world you have kept watch on them. I wonder, have you ever seen events like today's?

Saburo coughs, and even my operative is not spared the curse of the Death: my borrowed body is wracked with a choking fit, and when it is over I still find it hard to breathe. I begin to ease my awareness out of that fleshy prison, leaving the body to manage itself. I want nothing more than to return to Amny and be done with this sordid matter . . . yet I must see it through to a conclusion.

We are met by a robot on whose shoulders floats the image of a woman's head. She nods. "I am Gingiber Maur, undersecretary of state. We received your message, Doctor Saburo, and our foremost medical laboratory is yours. You will forgive me for not meeting you in person . . . ?" She seems a little embarrassed, yet Saburo pays her no mind.

"Yes, yes," he says, suppressing a cough. "Show me to the lab. I must examine the boy with proper instruments."

"We have few visitors from space," she tells us as we board an empty train and are whisked forth. "Have you come from far?"

"From the Credixian Imperium, ultimately. Immediately, from a ship a few parsecs out from your sun."

She glances at Ved and my operative. "Tell me, you are escaping from the Death? This ship, was it infected?"

Ved quivers at this talk of the Death, and I broaden my awareness to sing him calm melodies of the Inner Voice. He is not yet sure who I am, but he responds to the song of the Hlutr.

Saburo nods, foaming with impatience. "We rescued the boy from a

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charnel ship—he was the only survivor. The sooner I get to your medical equipment, the sooner I'll be able to start figuring out why he lived."

"To be sure." The train slows, and the robot shows us through the door into a narrow corridor. As soon as we are through, the door slides shut. The robot stands before it, pointing toward the opposite end. "This way, if you please."

Saburo's eyes narrow. "This isn't a hospital. Where are we?"

The robot advances, and we have no choice but to fall back before it. Gingiber Maur's smile fades. "I am sorry, Doctor. Telorbat is under strict quarantine. We have no choice but to isolate those who have had contact with the Death." We are halfway down the corridor, now, and the far door begins to open. "As a medical man, I am sure you understand. You will be cared for; our prisons have a complete range of services."

"Prison?" Saburo echoes. Then the robot shoves us forward, and we tumble through the door.

Ved clings to my operative's hand, and I wrap an arm about him, all the while singing to quiet him. For we have surely walked into his worst nightmares.

A room the size of an spacecraft hangar is crowded with coughing, weeping Humans. Some are dead already, others are motionless upon mats and have only hours of life left. Some of the healthier ones are ministering to the others.

"Keep Ved back," Saburo tells me, and I am only too glad to comply. We stand in the middle of an open space, and I turn the boy's face to the wall while at the same time I hiss, "Saburo, what are we to do?"

"Don't worry. These people are paranoid, but they're stupid." He glances at an instrument clasped about his wrist. "My ship will be here in five minutes, and in another five we'll be blasted out of here."

"Unless they have ships to destroy yours."

"You won't find a working starship *on* this planet. Everyone who could leave, did. That's why the city's so empty. The ones who got left behind decided to set up this quarantine, but it won't help them." He bares his teeth in haughty animal aggression. "How's Ved?"

"Upset. We sing to calm him, and it seems to help."

"Good. Keep it up."

When Saburo's ship arrives, there is no doubt: a bright flash and a noise like thunder, then half a wall collapses in upon itself. Through smoke and dust, I see a moving wall of dark metal—the ship.

Saburo points and slaps my operative on the back. "Run!" he shouts.

By the time we reach the ship's hatch, twice seventy others have arrived as well. Some are too sick to move, yet they push themselves forward only to fall into the path of others. Their minds beat with terror and panic.

Saburo pushes through them roughly, then grabs Ved and my operative in firm hands and pulls us toward the ship as if through crashing surf. Human bodies press up against me, choking and vomiting, and I feel Ved's mind shake in counterpoint to his nervous body. The quiet melody of the Inner Voice pauses,

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then fragments as the boy's mental walls break and the full horror of his last few weeks comes smashing down on him.

He screams in an agony that paralyzes Hlutr on all nearby worlds. And I—who stand as close to that cry as I am to the soil of Amny—I stagger back, nearly driven from my perch in my Human operative's brain.

In that brain, in the confusion of the Inner Voice and Ved's pain, a miracle happens.

A personality submerged for a lifetime—the original identity of my operative—hears Ved's cry through the endless distance that she has driven between herself and reality. I feel her stir in that Human brain, and I am shocked to silence. Even the Hlutr could not reach her! Yet she comes forth, responding to a pain greater than her own.

Her name is Irisa, this Human whose body I have borrowed. She is almost as sensitive to the Inner Voice as is Ved, and she knows only that she must help him. Limbs move of their own volition, and Irisa lifts Ved, hugs him to herself. The ship's solid wall parts, and she carries him across the threshold to safety, followed by Saburo. The hatch closes, and the ship lifts off, soaring high above city and forest.

Rejoice with me, brothers and sisters of Telorbat. Give me your Inner Voices in song: for Irisa was lost, and has come back. For Ved, whose cry brought even the Hlutr out of their age-old reveries, is delivered from his hell, Irisa, moved to mercy by his need, has saved him.

Riding high above that world, rooted unregarded in Irisa's brain, I sigh. When a poor creature such as this, so frightened of mere existence that she turns her back on it and chooses the cool depths of madness . . . when this poor beast can feel such mercy, dare a Teacher of the Hlutr feel less? These Humans are wild and terrible, yet there is within them a core of true beauty. An age ago as they count time, we Hlutr agreed to help them as we could, to find and develop that beauty. To guide them when they faltered on their road to truth. To aid the honest ones among them as they sought maturity. And now, as I watch the dawning of a consciousness even I had thought lost forever, I reaffirm that vow.

Behind me, I feel my own Elders, and *theirs*, perhaps up to the Eldest herself, I feel them sway in agreement. *You have learned, Little One*, they seem to say.

Irisa knows what I require, and gladly she gives me the use of her body one last time. "Very well, Saburo," I say, "Bring Ved to me on Amny. We will find your cure to the Death. And the Hlutr shall administer it, though it cost the lives of many times twelve thousand of us."

Saburo nods, and the ship turns back toward home.

Ved and Irisa stand before me, in the peaceful night of Amny, and the gentle breeze brings me their alien scents. Saburo is weak, and must be carried on a litter; they settle him next to my trunk, where I can feel the fevered warmth of his body.

Help me, brothers and sisters. Sing with me, Elders. Time is short, and the problem very complex. You who know Humans, and you who are experts in animal biochemistry: sing with me.

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The Hlutr sing in the Inner Voice, for now we are decided and there can be no hesitation. Those of us who study the problem, must live more quickly than is our wont—for the Death would require many seasons of Human study to yield its secrets. We Hlutr do not have their machines, their computers, their vast laboratories; we have far better, the massed minds of the Hlutr themselves. This is our work, the work we are meant for, and as we unlock the mysteries of the Death, I feel the orange-red flush of deepest happiness creep over my body.

Now we live still faster, and seasons of time to us are but minutes to the watching Humans. The song builds upon itself, reaching toward a shattering crescendo—then there is the taste of victory, the rush of joy, and . . . silence.

I slow my rate of living, until once again I am in the time-frame of Humans. Exhilarated, I have complete control over my entire body; my answer comes in a song that fills the whole glade.

"Saburo, it is done. We can make a counter-virus for the Death. Hlutr will manufacture it, then spread it on all your twelve thousand worlds. In weeks, the Death will be over."

"Thank you, Teacher," he croaks. "W-when will you begin?"

Before I can even frame the question in the Inner Voice, my Elders answer it. *When you wish, Brother Hlutr.*

"We will commence the cure at once." On all those twelve thousand worlds, many times twelve thousand Hlutr stand ready to give their lives in the final detonation that will assure survival for Mankind. The night is alive with their song, a mixed song of triumph and a twinge of regret.

One of us must be first.

To the memory of the Traveler within me, I say, "Are you happy with me, little brother?"

"I am happy with you," he seems to say. "Come, Teacher . . . join me and be remembered forever."

"Stand back," I tell the waiting Humans. The dissolution is catastrophic, as it spreads Hlutr-substance on the winds and streams—but most of the force is directed upward. They need not withdraw too far. And I want Saburo near enough to catch full benefit of the cure.

Now I feel it build within me, as my Elders guide me in this final, most difficult task. The change comes like a building glow from the very center of my being, a welcome swell of warmth that lifts me toward the cool, eternal stars.

Hlutr have done their job well. The cure, I know, will work. There is a last surge in the song of the Hlutr . . . my brothers and sisters, saluting me and this thing I do. Two faltering Human voices join this song; I look down and see Irisa and Ved standing hand-in-hand over Saburo. And ultimate peace rises from the soil to engulf me.

Content, I fly upward to meet the stars and at last to take my place in the Universal Song. ■

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James B. Johnson

CONESTOGA HISTORY

Lots of commendable things can be overdone, with consequences long regretted. For example, what if . . .

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1796: Excerpt from Washington's Farewell Address, September 19:

"And so, when the horse broke its leg, the Conestoga went over center and tumbled down the ridge into the Ohio River. Seven men and women were killed. The Presidential Commission which investigated this national tragedy has made preliminary findings that the horse is not the proper propulsive method for the Conestoga—or the horse should be reengineered to preclude further accidents. Design flaws in the Conestoga are also being studied.

"Secondly, in response to the critics, especially those with input to the budgetary process in Congress, I have established another Presidential Commission to determine whether we ought to send out *unmanned* Conestogas only. The debate continues."

1803: President Jefferson is unable to convince Congress to buy Louisiana Purchase.

1804: Meriwether Lewis, secretary to President Jefferson, and Army officer William Clark dispatched to Florida and Alabama on fact finding trip.

1812: Napoleon I allows Louisiana territory to secede from his rule and establish itself as the French States of America. War with Britain avoided when Napoleon mediates peace.

1820: Spain cedes some territory to United States, Floribama becomes fourteenth state.

1841: A stream of United States citizens renounce citizenship and embark for the west coast of America.

1842: Congressional oversight committee established to monitor progress on reengineering of the horse and redesign of Conestoga.

1844: May 24th, inventor S.F.B. Morse sends first telegram from Washington City to Baltimore: "What hath God wrought!"

1846: Republic of Texas established.

1855: David Crockett, President of the Republic of Texas, invites emigrants from the United States.

1859: Attorney Abraham Lincoln turns down Presidential nomination saying, "Hell no, I won't run."

1865: Presidential Commission sends respresentatives to offer commission to Austrian abbot Gregor Johann Mendel to assist in redesign of horse.

1872: Washington City, President Elect Horace Greeley incites riot when in a speech he recommends young men to "go west" and vows immediate anti-slavery legislation.

1876: Crazy Horse and Sitting Bull lead revolt and secede from French States, establishing Indian States of America.

1898: General George Armstrong Custer, military attaché at the U.S. Embassy to the Indian States of America, drowns in the Little Bighorn River while swimming.

1900: Spanish States of America established. Conferences arranged with Republic of Texas, and Indian States of America over boundary disputes. Previous "California Territory" divided, but remains mostly in Spanish States.

1910: British Canadian States of America settles land disputes with Indian States.

1942: Major General George Patton (AEF, Sp. States of America) strikes Sergeant Audie Murphy (AEF, Rep. of TX) for cowardice during the German invasion of England. Sergeant Murphy,

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the recipient of two Rep. of TX Alamo Medals (Highest Honor, equiv. Cong. Medal of Honor), a victim of exhaustion and shell shock, strikes and kills General Patton with a single blow to the neck. The Rep. of TX threatens to withdraw from the Allied effort as a result, until Murphy is given a battlefield commission and command of the remaining Rep. of TX troops.

1943: Hitler wins, subdues Europe. Massive "Boat Lift" follows. Millions escape to North America, British to the British Canadian States, French to the French States, Spanish to the Spanish States, Poles to Russian Siberia. Danes have nowhere to go. Stalin continues bargain with Hitler.

1955: Hitler dies of syphilis. European Empire of the Third Reich crumbles to semblance of former countries. Stalin threatens, then dies of stroke.

1959: First German in space.

1960: First Russian in space.

1961: Massive protests in the large cities of the fourteen states of the United States over the "foreign invasion" of the French singer Elvis Presley.

1962: President John F. Kennedy demands that the horse redesign effort be completed by the end of the decade. Also vows to end Segregation.

1963: President John F. Kennedy is assassinated while on a state visit to Cuba.

1967: Mules and burros discarded as successors to the horse.

1968: The Sioux Falls Scalplocks win baseball's World Series, Mickey Mantle, from Oklahoma, is MVP.

1969: First German on the moon.

1970: Soviet Union orbits space station.

1975: The Conestoga is retrofitted with airbags and gyros.

1980: Joint German, Soviet expedition to Mars.

1985: In Pretoria, Republic of South Africa, thousands of people demonstrate in front of the Embassy of the United States. Hundreds of people arrested after handcuffing themselves to the Embassy fence protesting Segregation in the United States.

1986: All the countries in North America participate in "Hands Across America." In the United States, people lined up from the western border in Virginia to the Atlantic Ocean, and raised $314.82. An oversight committee was immediately established to allocate the funds.

1987: The new horse design is finally approved, and surprisingly it looks like a llama. While most people drive Japanese cars, nostalgia grips Congress and that body votes to hold approval of the new horse pending EPA studies of "waste retrieval units" to accompany each horse. German colonization of Jupiter's moons launched from Earth's orbit. ■

● Those whom the gods would destroy, they first make President.

Kelvin Throop

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on gaming

Matthew J. Costello

I'd like to talk about Accolade's remarkable and quirky SF computer game, *Psi Five Trading Co.* But first, a word about baseball.

I never liked the game. On the streets of Brooklyn (known, of course, for the charitable way children treat each other) I was the last picked for "two-sewer stickball." The loser in the ritual "one potato, two potato" drafting process got me. Attribute it to my bad vision and a general klutziness that has shown no sign of diminishing with age.

Baseball failure continued to dog my days until I finally left youth behind and the domination of baseball.

Then, last summer, I received the computer game *Hardball* (Accolade, 20863 Stevens Creek Boulevard, Cupertino, CA 95014; $29.95). Accolade is a relatively new company that has had a lot of success, due to its experienced staff. Even its failures, like *Law of the West* ($29.95), are interesting, with its clever mixture of sagebrush-style graphics and text adventure. It doesn't work, but it's sure interesting to look at it.

Hardball, though, was another story. The game looked exactly like a TV picture of a big-league baseball game. You saw the pitcher wind up, the batter nervously wiggle the bat, and the umpire yell out "strike." Ground balls had the infield scurrying to make the play. The game has the sound of crowds cheering, rinky-tink organ music and "charge" fanfares when bases are loaded.

It is, so far, the most entertaining computer game I've ever played. It was so good, in fact, my batting thumb got sore from my own twi-night double headers.

So, when *Psi Five Trading Co.* arrived I expected something unusually good, and the game did not disappoint me. As in *Hardball*, the graphics are spectacular, perhaps even more so. Players take the role of captain of an intergalactic trading ship, ferrying supplies to the rough and tumble Parvin Frontier. Unfortunately, a mother lode of rich mineral deposits has made the frontier prey for space pirates who are eager to scrounge up supplies and minerals.

Your first task is to select a crew. And here is where the game departs from anything you've ever seen. In each of five departments (Weapons, Scanning, Navigation, Engineering, and Repairs), you have to pick a crew member. The program displays six choices in each department and you just don't see a text description of the candidate. Each particular crew member has a picture included. There are sharp-eyed robots, and furry, noodle-nosed aliens. There are insecure-looking Ewok types, and efficient, green-skinned females with double bee-hived hairdos.

Once you select a crew member, you are shown his/her/its qualifications, education, experience, and strengths and

(continued on page 143)

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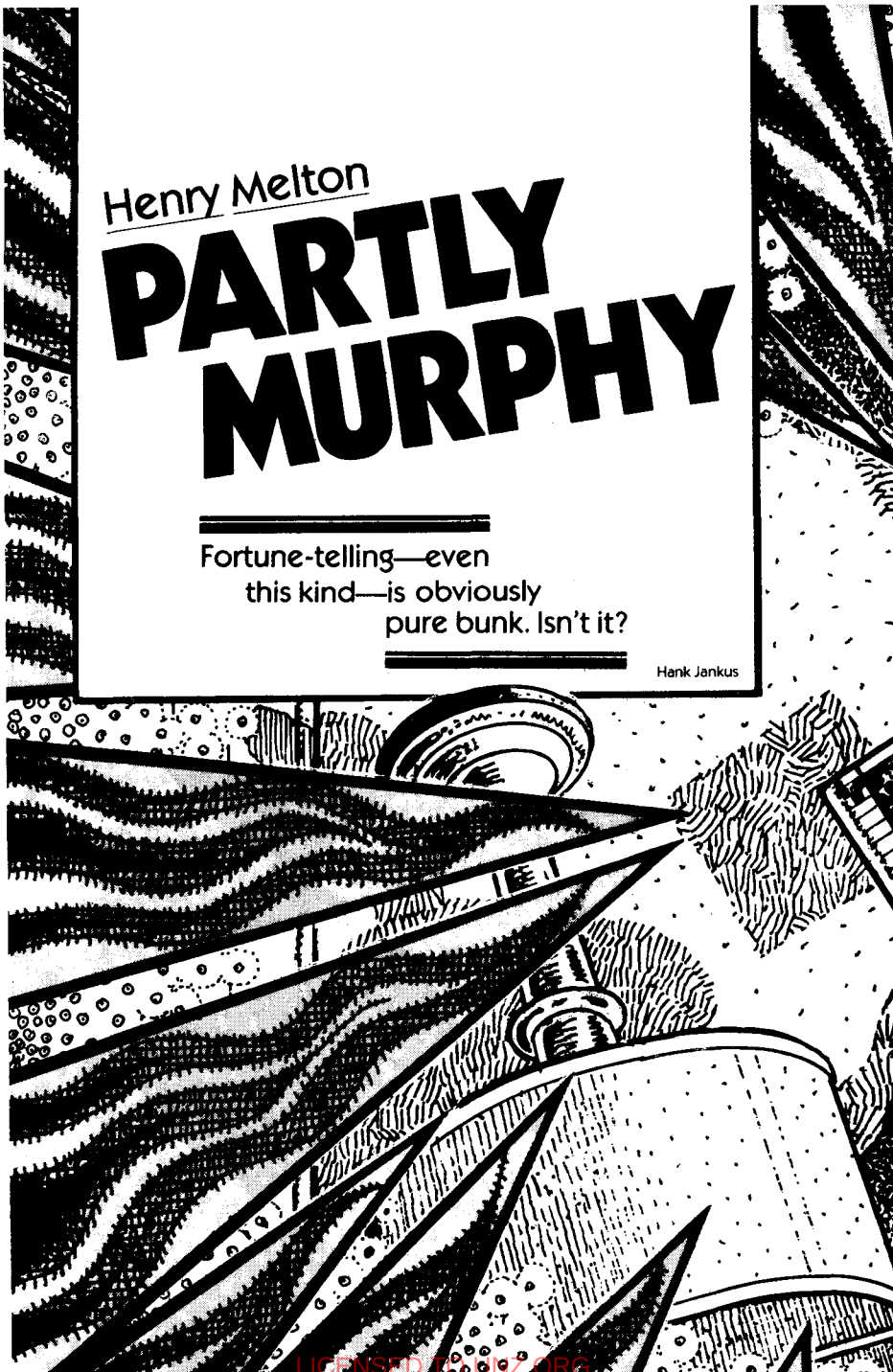
Henry Melton

PARTLY MURPHY

Fortune-telling—even this kind—is obviously pure bunk. Isn't it?



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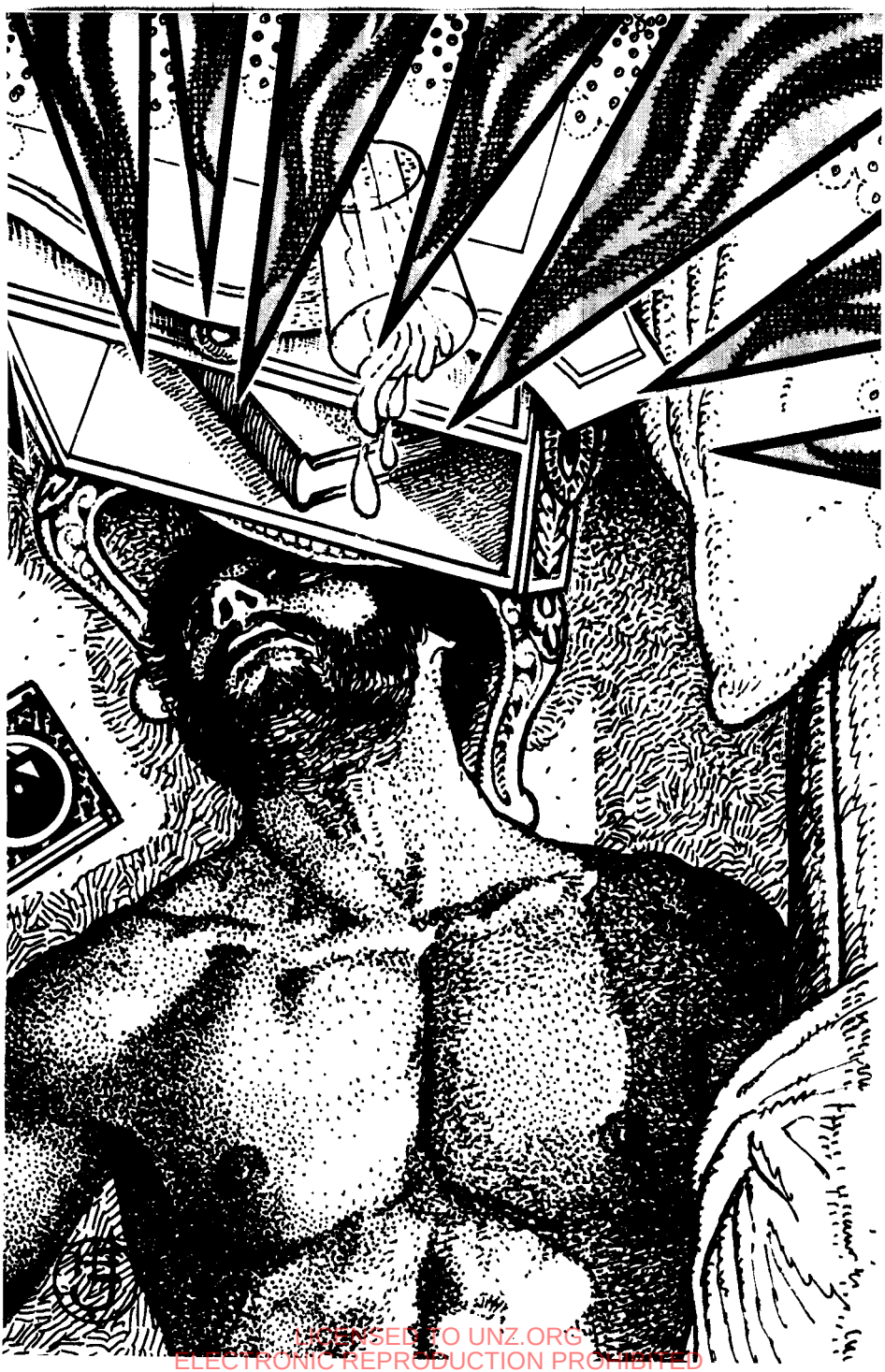

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The *blaaaaa* of the alarm clock drove Jim Oliver awake. With his eyes tightly shut against the morning glow, he slapped at the top of the clock, hoping to hit the five minute button. His aim was bad. He knocked it skidding off the night stand. Eyes suddenly wide open to catch it, he lunged. He grabbed, missed, and slid off the bed himself, landing on painful corners with his head trapped between the legs of the night stand.

At least the alarm had stopped.

". . . Clear skies through Friday, with a twenty percent chance of scattered showers over the weekend," the familiar voice was saying. Jim just rested in his contortionist position, content to wait until it got really uncomfortable, or until he woke up enough to move, whichever came first.

"And now for the fortune report: The National Bureau of Statistics reports new activity in the Central Texas area. Expect partly murphy conditions through the rest of this week with a twenty-five percent chance of isolated byxcs."

Jim winced. "No. Not today," he thought. "I can't afford any bad luck today." He twisted his arm to get some leverage to help himself up.

A loop of power cord pulled tight around the leg of the night stand. With a crash, it toppled over on top of him.

"What happened to you, Jim?" Jess Hammer's voice rang out across the open office area. He was an hour and a half late and a dozen pair of eyes turned onto him like air raid searchlights, pinning him there with his coat and briefcase in hand.

Jim eased over to his cubicle and divested himself of the incriminating evidence. "What do you mean?" he asked Jess in all innocence.

Jess was a *large* man. The finger that he pointed at Jim's sore eye looked like a blue steel .45 pistol. "That. Who hit you?"

Jim fingered the tender area. "Is it showing? I had a fall this morning."

Jess chuckled. "If it were any darker, you would look like Red Beard the Pirate. Did you have to go by the doctor's office? I notice you are a little late getting in this morning."

"No. Just traffic. One of those gravel trucks had a slight disagreement with a cement truck on the Montopolis bridge. I was stuck there with an instant barricade blocking my way forward and two million cars backed up behind me. The police showed up pretty quick, but they were more concerned about getting the cement spill off the bridge and into the river before it set than they were about getting the traffic unsnarled."

Betty Walker stopped outside his cubicle as he related the gory details of the accident. She waited until he ran down, then handed him a photocopy of a meeting notice.

"Mandatory attendance. Eleven sharp. The General Manager is in town and he wants to see everybody there."

Jim frowned. "What's the meeting for?"

Betty let an evil smile creep over her normally dour face. "You know the rumors. It's layoff season again. Some people are going to get the ax today. Parker flew in just for this. As General Manager, he figures it is his job to be the bad guy." She looked at him carefully, as if checking him for lice. "I

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would hate to be in your shoes today, Jim Oliver."

"Why? What do you mean?" He could feel his heart start to beat faster. He had been dreading this day. He was a good worker. Surely they wouldn't cut him.

"Have you heard the fortune report today?"

"Sure. Partly murphy. Some byxcs around."

She nodded. "You've got a byxc. I watched cable news this morning. Want to know the common factor this time?"

He didn't want to know! He nodded "Yes."

"Men with red beards. Jim Oliver, you're doomed." She shook her head, and walked off with an amused little smile.

Jess frowned. "A byxc. Oh, great!" He eased a step back. "I was sure our working group would be safe from this cut. But with a byxc around. . . . Jim, I would advise you to get sick and go home. I've got to go."

Moving quickly, the big man got out of his cubicle and out of range.

Jim turned to his desk. It was littered with a half dozen little yellow sticker notes. He had missed two early morning meetings, a call from his girl friend, and he had papers to prepare, due an hour ago. He sighed.

It was a long day's work getting to eleven A.M. Everyone who walked past his cubicle glanced in at him. Everyone was aware of the byxc. Even his phone contacts seemed eager to cut the conversation short. He had a disease, bad luck, and it might strike anyone around him.

Jess came by, not stopping inside the cubicle. His face was grim.

"Jim, I talked to the boss about the byxc. He agreed it would be the best thing to send you home, but he can't. Word came down that he had to have everybody in the big meeting if he had to use a whip to do it.

"However," he continued with a grin, "we are going to try to isolate you. You are not to use the copier or the word processors, or the coffee pot. Steer clear of anything mechanical or electronic. Don't even go near the computer."

Jim said, "Do you really think that's necessary?"

The big man replied, "Sure! The phones convinced us."

"Phones?"

"Yes. They are all out. Didn't you notice?"

Actually, Jim had noticed the phone going dead on him during that last conversation, but it had been so much like all the other minor catastrophes that had been plaguing him all morning that he hadn't thought it was anything more widespread. Perhaps the injunction to keep away from the equipment was a good idea. His stapler was seriously jammed, his file cabinet had a broken key stuck in the lock and his paperclip-and-scissors drawer was a quarter inch deep in coffee.

He felt a wave of sadness, a burning knot that turned in his stomach. His world was falling apart. And in ten minutes, he would probably be fired.

"Jess," he asked, "this has to stop. I can't take this pressure."

"Hang in there," Jess said cheerfully. "It's just a byxc. It will fade in less than a day. Use some elementary

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caution and you will come out of it with nothing worse than an after-dinner story to tell."

"What do you know!" Jim bit back, "You aren't the one with the black cloud over your head—the demon waiting to trip you up."

"Easy Jim." Jess eased his big frame into the cubicle. He pulled up the spare chair and tested it, as if he expected it to collapse under pressure. When it passed, he finally trusted his weight to it.

"Jim, what do you think a byxc is?" he asked.

A hundred news stories and sitcom situations passed through his mind. "It's a bad luck cloud. It follows somebody around and causes all kind of accidents to happen to him and the people around him. The government figures out when they are going to happen and reports them just like the weather."

Jess gestured with his big hands, "Almost. Murphy weather—byxcs, they have always been around. They are just human-scale variations in small-scale statistical mechanics. They are times and places where normal statistics falls apart. There is nothing evil about it. There isn't even anything intelligent about it."

"Then why is it always a bad luck jinx?" Jim demanded.

"It isn't really," he shrugged. "Just *wrong* luck. We humans aren't dumb. Let a stone age hunter find rabbits to eat by traveling the forest path and let him find big toothed nasties to hunt him on the swamp path, just in the normal run of luck, and he would certainly hunt the forest. If a byxc came along, he would find nasties in the forest. Bad luck for him. But if he had taken the *wrong* path that day, then it would have been his good luck.

"We humans bet our lives on the run of the dice. If the whole world was trapped in a giant byxc for a hundred years, we would still prosper—we would just have to learn the new way the dice bounced."

Jim thought a moment. "Do you mean that I could get in my car and race through downtown at a hundred miles per hour and not hit anybody?"

"Maybe. I wouldn't try it myself, but it is certainly possible. Your luck is different now, for as long as the byxc lasts. Today is the day to bet on longshots. Las Vegas pays very close attention to the fortune report. If you walked in with that beard, they would very politely usher you out.

"But for today, take no risks. Don't trust anything mechanical or electronic. If your byxc doesn't dissipate by the end of the day, let me bring you some food and a blanket and you stay here over the night. Automobiles are too hazardous —for you and for any innocent bystander."

"Okay. If I last the day."

Betty rushed up, "Phones are out. The eleven A.M. meeting is postponed until after lunch. One, at the auditorium. Got to run."

The day dragged. The phones came back up, but no one called him. The word was out. It would be useless to trust Jim Oliver with a job today.

The one o'clock meeting was postponed again, until three. But it was definitely stated that the meeting would be to announce the headcount cuts. The

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delays were caused by paperwork snarls in the manager's office, but the meeting would be held, paperwork or no.

Jim had skipped lunch; why risk it? Following Jess' advice, he tried to minimize his risk. He sat in his cubicle. He tried to avoid using anything more complicated than a pencil, until his pencil snapped.

Sleep was impossible. Not only was the injunction to never sleep on the job written deep into his psyche, but other worries were enough to keep his mind working.

If he were fired, how long would his savings hold out. The whole industry was depressed. Could he get another job in his area of specialization before the money ran out? He was raised to be disdainful of people on welfare. Could he stomach collecting unemployment insurance? How would it feel to be a "client" of the Employment Commission? Should he starve for pride's sake?

Halfway through the afternoon, nature called and he left the cubicle. He was very careful. That didn't prevent him from scalding himself with the super-hot water that came out when he attempted to wash his hands.

He stared at his red-bearded face in the mirror as he ran cold water over the burn.

The bycx was attached to red-bearded men. What if he cut off his beard? He shuddered at the thought. He had been bearded since he left high school. He liked the beard. It was him.

But he remember the decision he made years ago. If he ever believed that his beard was keeping him from a promotion or hindering him in his job, he would cut it off. He knew his father feared that it was a disadvantage, but in all the time he had been with the company, he never felt any suspicion that anybody minded. Even his boss had a beard, and that was as good an indicator as any that the factors his father had seen working had changed for this generation.

So now, was it time? If he cut the beard off, borrowed a razor and shaved it clean, would that magically remove his name from the layoff list?

He stared at himself. His hand throbbed from the scalded place. He took a deep breath and shut off the water.

No. I'll keep the beard. I won't give in to a quirk of statistics. Besides, scissors and a razor were lethal instruments right now.

Jess came by to escort him to the auditorium at three, but the word came just as they were leaving that the meeting was being postponed for another hour. No explanations.

"A four o'clock meeting," Jess shook his head. "Closing time at four-thirty. If they delay it any more, then that's it for today."

"I wouldn't mind." Jim settled back into his chair, conscious of how carefully Jess checked everything out when they were together.

"I don't suppose any of us would mind. But people are going to be cut, and every day delayed means another body out the door." Jess had a sour look on his face and Jim had a feeling it wasn't because of the byxc. Jess was manager to a group of about a dozen people on the production floor. Jim suspected that Jess was worrying about them more than he would about himself.

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"Hey, Jess." Jim asked, trying to distract his interest. "You know a lot about physics. What are byxcs?"

He shook his head, "I don't know, Jim. I've heard a dozen theories, blaming them on everything from ghosts to Einstein's hidden variables. The only thing I do know for sure is that you can predict murphy fluctuations if you have a big enough super-computer and have enough base data. It is a whole lot like predicting the weather; that's why the government got into the job in the first place—researchers kept wanting to borrow time on NOAA's big weather computer. Once NASA got the idea that would be a good idea to check for byxcs before any space launch, the funding for a permanent fortune report finally came through.

"It was a very human thing to do—if the universe wants to play with loaded dice, then we'll calibrate 'em and predict 'em."

Jim shook his head. "Still, it would be nice to know why my luck has changed. I would also like to know when it will get back to normal!"

Jess looked thoughtfully, then said, "Get a calculator and divide six by three."

Jim fumbled through his disk drawer, jabbing his finger on a thumbtack. The calculator was a simple one, useful for calculating percentages and adding up his checkbook. He keyed in the simple division problem and read the result back to Jess. "Six divided by three is 102.111139."

He nodded, "Keep that with you and try it again every so often. When you get the right answer every time, then your byxc will probably be gone."

* * *

When Jim eased into the back of the auditorium for the four P.M. meeting, he still clutched the calculator like a set of worry beads. He had done over a hundred tests, with results as high as OVERFLOW and as low as–8.74535E12. He had even gotten a 2.00 every once in a while, only to get something outlandish the next try. The poor little electrons in the semiconductor chip weren't following their statistical laws at all.

The auditorium was large, but still, to get all the employees in at one time was an exercise in sardine packing. Up on the stage were several of the higher managers, having whispered conversations among themselves. The crowd in the seats and standing along the walls managed a respectable roar as hot rumors circulated through the unnumbered conversations. Statistically, there was only a very minute chance that everyone would stop talking at the same instant, but that's what happened.

For a long five seconds, that great mass of people were quiet. Everyone looked around for the reason everyone else had shut up, then in a renewed burst of noise, they all started talking at once.

Jim Oliver tried to keep out of everybody's way, content to play with his calculator. Four o'clock came and went with no one stepping to the microphone. Five minutes passed, then ten. The people up on the stage were plainly at a loss. Someone was sent off to check on the holdup.

Jim got 2.00 twice in a row, before it went crazy again.

A man with a worried look on his face came up on the stage. The group on the stage held an animated conver-

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sation among themselves. The crowd in the seats quieted down as everyone strained to overhear. Finally, the man from Personnel stepped up the microphone and tapped it.

"I have just been informed that Dick Parker, our General Manager, has broken his leg. This meeting will be postponed until tomorrow."

There was a mixed roar—some cheers, some expressions of concern. But there was a great feeling of reprieve. The rear doorway where Jim was standing was suddenly flooded by people trying to get out. No one tripped. Jess spotted Jim being pressed along in the crowd, calculator held high. Jim waved and shouted, "Five times in a row!"

It was generally agreed that it was time to go home. Jim Oliver retrieved his briefcase and joined the flood of people heading out to the parking lot.

Outside, there was quite a mob. Jim pressed through the group to see what was going on. An ambulance was backed up in the No Parking zone and a gurney was being edged up to the back of it. Laying down on the gurney with his leg wrapped in white was Dick Parker, General Manager, working frantically with a pair of scissors, hacking away at his red beard. ■

IN TIMES TO COME

● If any of you were concerned about the lack of a fact article in this issue, I hope you'll be relieved to hear that they'll be back next month in a big way. In fact, Ben Bova's "Moonbase Orientation Manual" is too long to fit comfortably in one issue, so we're running it in two parts, with some admirable illustrations (including next month's cover) by Pat Rawlings. As the name suggests, the format of this one is a bit unusual. It's written as chapters (on such topics as transportation, engineering, research, and tourism) from a handbook for new residents of a colony assumed to be thriving on the Moon in 2036. But the fact article label is well deserved, because though the colony doesn't yet exist, the manual offers a wealth of solid information about what it *can* be—if enough people want it enough.

Next month's fiction headliner is quite a notable one: "The Forest of Time," a new novella by Michael F. Flynn. Flynn's "Eifelheim," which appeared here last November, created quite a stir, and this one is just as richly imaginative and thoughtful. Set in a parallel universe where the Thirteen American Colonies failed to unify themselves, it raises a multitude of intriguing questions about how history works, while bringing the author's own new angles to some current ideas about the structure of time. All this while being an absorbing story of some people with problems forced to make decisions largely in the dark. For example, if you *were* a lost traveler from another branch of time, how could you prove it—or find your way home?

And, of course, we'll have Part II of Harry Turtledove's *The Report on Bilbeis IV.*

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The Alternate View

STEALTH

G. Harry Stine

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The news media has been alive with reports and speculations about the super-secret "stealth" aircraft being developed by the United States Air Force.

Many people think "stealth" is something new.

It isn't.

And it isn't just a matter of making something hard to see with radar.

Nor is there anything really very secret about stealth—except certain specialized techniques that make it work. The principles of stealth are widely known. Anyone with a background in physics, electronics, and intelligence snooping and ferreting (otherwise known as "researching") can figure out how to make anything into a "low observable."

The best place to do research right now is your local hobby shop.

If you get there the day they've received a shipment of the "F-19 Stealth Fighter" plastic model kit produced by Testors (and molded in Italy by Italeri), you can get a pretty good idea what a radar-stealthed airplane might look like. The Testors "F-19 Stealth Fighter" kit is itself very hard to find; the stores usually sell out within hours of getting a shipment. The Soviet mission to the UN cleaned out a Long Island hobby shop shortly after the kit came out in July, 1986. And the kit is selling like nothing the hobby business has seen in years. So you may not be able to get one. (I managed to get two, and no, I won't sell you one!)

But you can also learn a lot by looking at photos and drawings of the Lockheed SR-71 Blackbird and the Rockwell B-1B bomber. And there are several books available that will tell you an amazing amount about "low observable" technology.

Let's take an alternate view of "low observable" or "stealth" technology.

First of all, one must realize that there are several different approaches to achieving "reduced signature" appearance. The objective is either (a) to not be "seen" either very well or at all by sensing elements or organs operating in different parts of the electromagnetic spectrum, or (b) to be seen and identified as something else. In short, if you can't achieve near or total invisibility, then perhaps you can confuse the sensors by emitting or reflecting a signal that looks like background noise.

Good old Mother Nature figured it out first. And we humans borrowed from her early in the development of military aviation. It's a low-observable visual technique called "camouflage."

Camouflage is definitely low-observable technology.

USAF aircraft sport two sorts of camouflage paint schemes, much to the disgust of the members of the International Plastic Modelers Society (IPMS) who would rather paint their scale models in the bright and complex color schemes of peacetime with all the squadron insignia.

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One current low observable paint scheme is the mottled brown and green ("sand and spinach" as well as other unprintable sobriquets) developed for use over Vietnam. This camouflage scheme makes aircraft difficult to see from above.

The other paint scheme is what the USAF calls "Air Superiority Blue," which it isn't because it's a unique two-toned grey color. But it makes F-15 Eagles and F-16 Fighting Falcons (the Electric Jets) very, very hard to see. I know. I occasionally fly in the vicinity of Luke Air Force Base near Phoenix, Arizona, which has several squadrons of both types of fighters. The playful fighter jocks swarm around Luke like flies around honey; it's the biggest tactical fighter base in the Free World (because we don't know or the CIA won't tell us what's the biggest base run by the *Frontovaya Aviatsiya* on the Other Side).

Fortunately, my airplane has a transponder to enhance its appearance on radar, and it's painted in "high-observable" fashion because I definitely and deliberately want other pilots to see me: solid white wings with solid yellow fuselage top and vertical stab and a minimum of contrasting color patterns. If you want to make something visible, make it all nearly the same color; if you want to make it hard to see, paint it in patterns of contrasting colors. It's like the difference between a Golden Retriever and a leopard.

About ten years ago, Grumman made a little two-seat training airplane called the AA-1b or the Tr2 or the "Lynx," depending on the model. The ship had a sliding cockpit canopy and appealed to the frustrated fighter jocks among the general aviation population, even with only 108 hp in the nose and a certification in the "utility," not "aerobatic," category. It was available painted like a World War II RAF Spitfire fighter, complete with roundel insignia. A nice camouflage job. But when someone flew one in the traffic pattern with you, it was pure hell because the camouflage *worked!* It was hard to see! Civilian stealth. (Not very many of them are left, I understand. They've been repainted, or they've been involved in midair collisions, or they've had forced landings in the boondocks never to be found again. Camouflage also has its disadvantages.)

Camouflage was perfectly adequate stealth before the development of radar and infrared (IR) sensors. Today, radar, IR, and lasers are the primary means of detecting, locating, and tracking aircraft in flight. However, depending on the rules of engagement (ROE) in effect, fighter interceptor pilots may also be required to "get a visual" on the target before "converting a shot opportunity." They must make visual identification. In wartime, however, this ROE should and probably would be rescinded.

Anything can be "seen" on radar if it has a different dielectric constant than its surroundings and does not absorb much of the impinging electromagnetic energy.

If you think of the microwave energy of radar as very long-wavelength light, many of the principles of optics apply to radar as well, especially when it comes to the best shapes for either being seen or for dispersing the illuminating energy that's reflected from the object.

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The best shape for reflecting the maximum amount of impinging energy is a corner reflector (a road reflector), followed by a plane surface (a mirror). The worst shape is a convex surface which creates a specular reflection.

Shape is thus important for radar stealth. Good radar stealth characteristics would dictate that surfaces blend into each other at the wing-fuselage junction, for example. Gaping jet engine intakes are excellent reflectors of radar energy. If the rotating compressor blades of a jet engine happen to be "visible" to a radar signal, they'll send a big and distinct signal to any radar that operates with the doppler principle. Thus, a stealthed aircraft would be shaped with flowing curved surfaces and jet engine intakes that are either flush with the skin or located in a place such as the top of the plane where radar energy would be unlikely to impinge. However, a Ryan Q-2C *Firebee* target drone was stealthed in 1960 by the simple expedient of fairing the engine intake into the fuselage lines using a wire screen.

Absorbing the illuminating electromagnetic energy is another stealth technique. Visually, this takes the form of flat or "matte" paint which tends to both scatter and absorb light. Special paints are also utilized to create IR and radar stealth. The early versions of the Republic-Fairchild A-10 Thunderbolt II (a name spurned by the A-10 pilots and others in favor of the sobriquet "Warthog" which seems to have stuck, much to the dismay of the USAF public relations people) were painted in various shades of grey like fighter interceptors. This made the ground-hugging A-10 stand out like a sausage in a soup kitchen against the thick green forests of central Europe where it's intended use is to bust the T-72 tanks of the Big Red Tide. They tried polka dots. They tried see-through black paint. They tried something called "40% Reflecting Mask 10A," a paint that reflects only 40% of the impinging light. The "Lizard" camouflage they came up with is hard to see and probably reduces the reflected IR as well; it probably contains some of that special paint because the A-10 seems to shimmer and change color from shade to sunlight. The paint job should probably be called "Chameleon" instead.

A chameleon is a natural example of specialized stealth, by the way.

These special low-visibility visual and IR paint jobs have also been accompanied by removal of the red-white-and-blue national cockade insignia. It's been replaced with grey outlined cockades on grey fighters and black outlined symbols on the A-10 and A-7 ground attack planes. All other markings on the aircraft have been reduced to low-contrast paint. If you want to know why modern US military aircraft seem to be so drab, it's because of visual and IR stealth paint. The Air Force and Navy people don't like to talk about these paints.

The Soviet Union seems to have stuck to "sand and spinach" camouflage on their MiG-19s, MiG-21s, and MiG-23s; US-like greys on the new MiG-29s and Tupolev "Backfire" bombers; and natural aluminum with big red stars on other planes.

Radar absorbing materials have been used in the US since 1945, and radar

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absorbing blankets and paints were applied to the Lockheed U-2, the Lockheed SR-71 Blackbird, and various unmanned remotely-piloted reconaissance vehicles (RPVs) to reduce their radar reflectivity and "enhance their survivability in radar-hostile environments." Any pilot who flew Route Pack 6 or Rolling Thunder over Hanoi knows what that sort of environment is. So do the Israeli pilots of the Chel Ha'Avir who flew the missions over the Sinai and the Bekaa Valley.

Stealthing in the infra red is something else again. All IR systems are at this time "passive"—i.e., they detect IR being emitted from an object. Any airplane obviously emits IR from its jet tailpipe and also from the leading edges of its wings and empennage and from the inlet lips of its jet engine intakes. The only IR stealth measures known to be in use involve paint with low IR emissivity, cooling the jet exhausts by mixing with cooler air sucked in through auxiliary intakes, and by surrounding the hot jet exhaust with a wall of cooler air as a fanjet engine does. The only way to completely stealth an airplane is to make the temperature on all parts of its airframe equal to that of the surrounding air.

Stealth has not only been with us for a long time, but stealth technology still has a long way to go because the instant any object emits or reflects any energy in the electromagnetic spectrum, some electronic warfare gadget will detect it.

But the public has yet to see the two stealthed aircraft of the United States Air Force, the Lockheed F-19 tactical fighter or the Northrop ATB (Advanced Technology Bomber), both of which are reported flying out of a secret air base at Groom Lake, Nevada, deep in the heart of a Restricted Area known to the USAF fighter jocks as "Dreamland." It's not really important that the American public see them; it is very important that The Enemy not see them, or have trouble seeing them, or not see them until it's too late. ■

For further information: The best generally available book on the whole subject of stealth and electronic warfare is "An Illustrated Guide to the Techniques and Equipment of Electronic Warfare," by Doug Richardson, Arco Publishing Company, New York, 1985, ISBN 0–668–06497–8, $9.95.

● Every fool believes what his teachers tell him, and calls his credulity science or morality as confidently as his father called it divine revelation.

George Bernard Shaw

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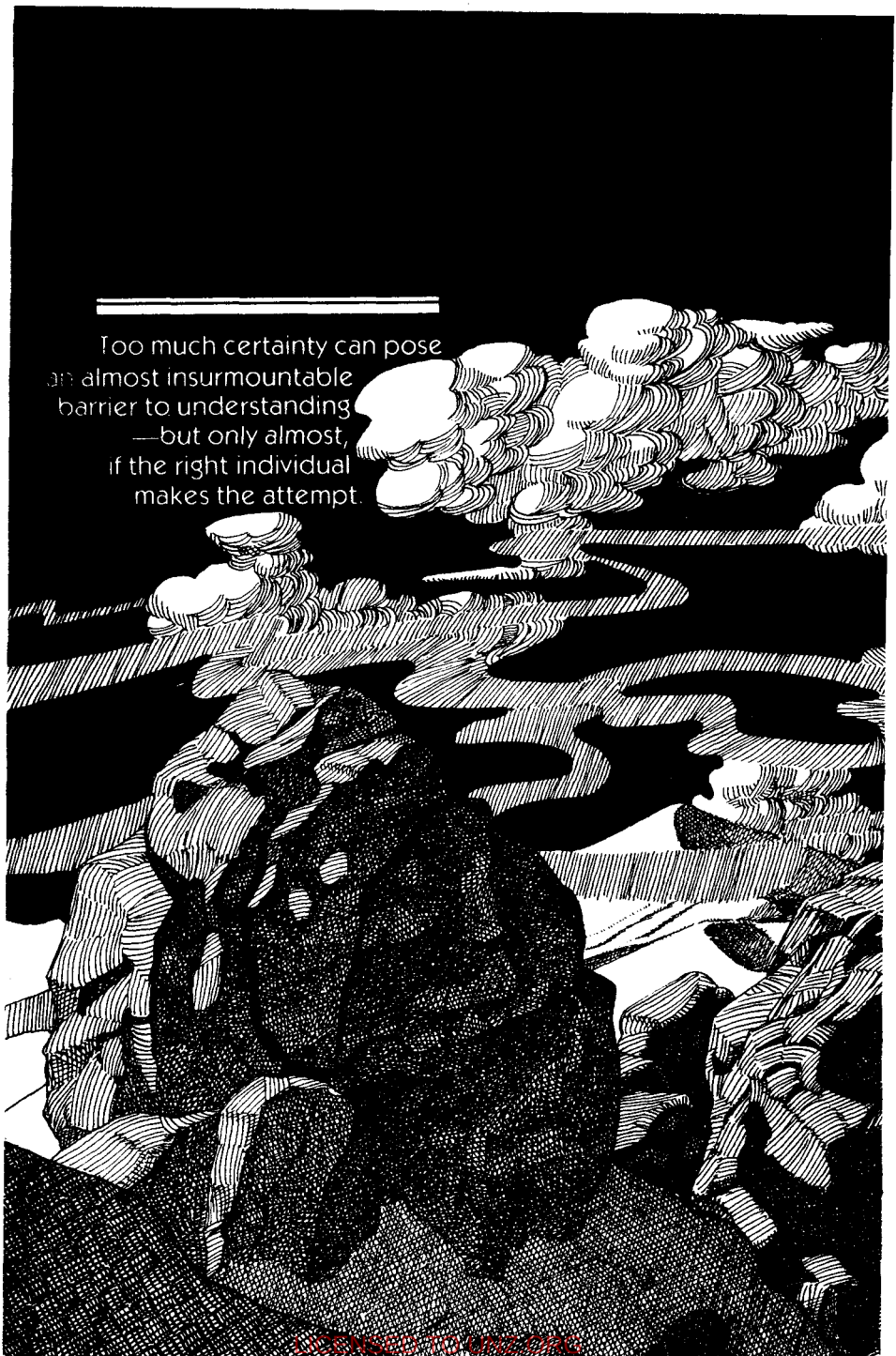

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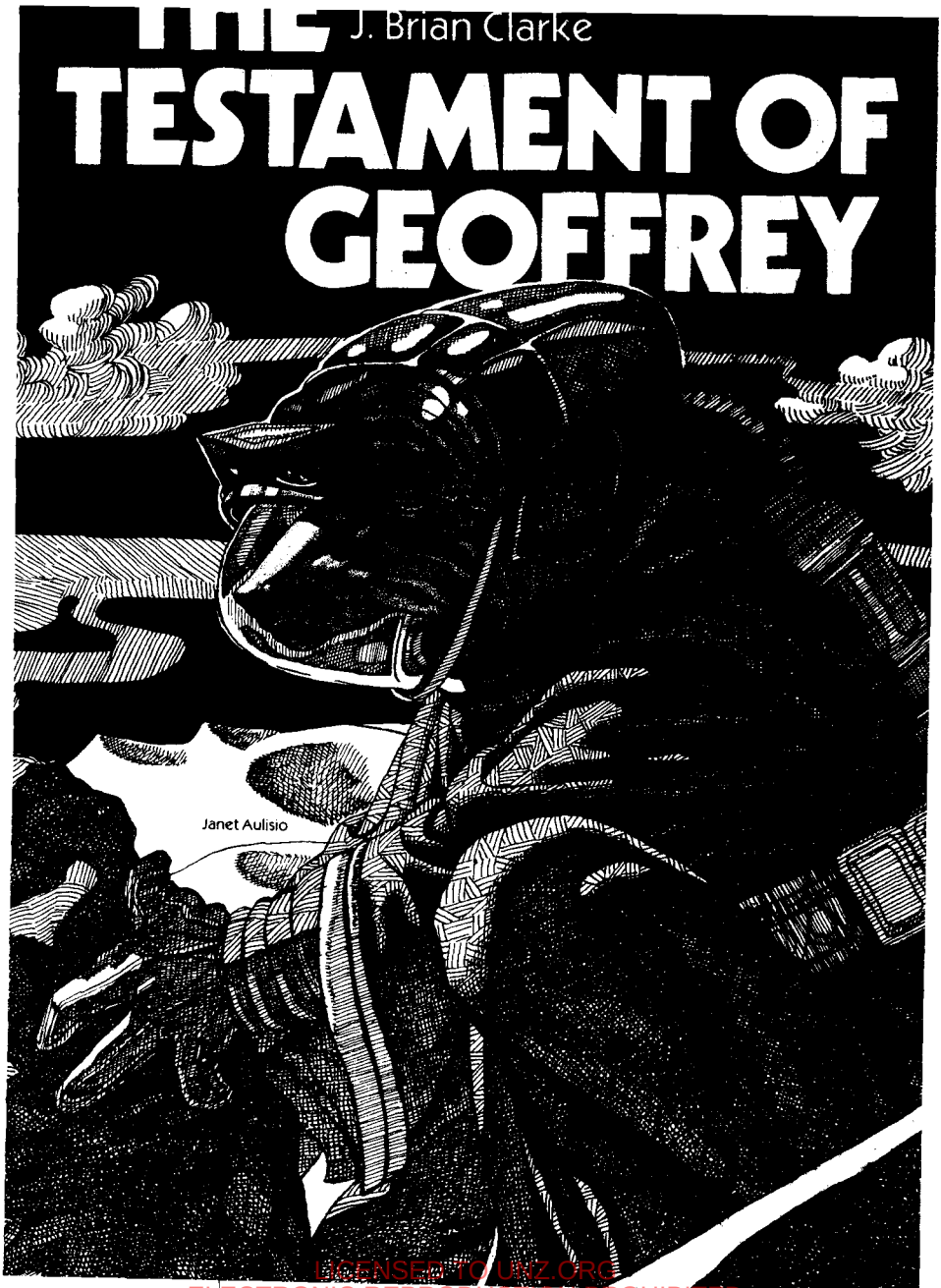
J. Brian Clarke

THE TESTAMENT OF GEOFFREY



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Expediters
Office of the Director
Aug 6, 2481

The Phuili do not acknowledge heroes. Even now, as humans and Phuili together probe the mysteries of the galaxy, the Phuili cling to their ancient dictum that the joy of accomplishment is and must be its own reward; that all else is demeaning.

So the document which was delivered to this office after the sad passing of one who truly played a special role at that critical juncture of history known as First Contact, turned out to be a delight as well as a revelation. Geoffrey was before my time of course, but the records corroborate the main facts of the encounter as he describes them. However facts are not feelings, as I am sure people who have read the various personal accounts published at the time have realized (I recommend 'The Meeting' by K. C. Alcorn).

But never before have we humans had the opportunity to understand this event from the Phuili perspective, which is why I unhesitatingly offer this document to the public domain. In fairness it must be said that it was only with extreme reluctance that the Phuili ambassador granted permission. As his Excellency put it, "It is not customary for any Phuili to place himself apart from the achievements of his people." Well, Geoffrey is gone now, and cannot suffer for what he has done. But I prefer to believe that the more humans and Phuili understand each other, the better it will be for both races. It is also good that human children can at last see our fellow cosmic explorers as something more than dog-like beings with sad eyes. That a Phuili can, in fact, be a giant.

Or even a hero.

Gia Mayland

I have interjected a few comments to assist the reader with some of the obscurer references. If I am belaboring the obvious, I make no apology. Nothing must be left to chance in this heaven-sent opportunity to strengthen the perilously fragile relationship between our two species; a relationship which too often, and sometimes for the most trivial of reasons, has threatened to break apart.

G.M.

I am Phuili.

My name is Gefapronikitafrekazanzis, or Geoffrey to the humans who knew me. Now I am old, with not much time remaining before I must leave this sequence and enter the next. However I still have modest notoriety as the one who made first contact with members of your species. Much has happened since that moment of my youth; the gates have been opened to the universe, and together we are exploring the mighty system of suns known so unappropriately by humans as the Milky Way.

I know however that a great curiosity still exists about that pivotal meeting so long ago. So to please my human friends, I now record what this Phuili did and saw when the long strangers first came to the Shouter.

The Phuili had been on that small world for many turns when the humans came. The Shouter is a desert planet with a thin atmosphere which is frequently obscured by windblown dust. Much like your Mars, I am told. Normally our explorers would have passed it by like hundreds of other worlds we

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had seen of its kind, if it was not for the artifacts which cover its surface in many thousands. Now, of course, we know the purpose of those artifacts. But until the humans came, the mighty structures had remained one of the universe's more spectacular mysteries.

The artifacts, or "AAs" as they are now known, are the terminals of an instantaneous galactic transport system, creations of a race long since departed from the known universe. The "Shouter" is so named because of the extraordinary radiations poured into space by the AAs—emissions undetectable from Earth because of the shielding effect of the nebulosity surrounding the Pleiades Star Cluster.

The arrival of the strange space craft into orbit above the Shouter would become an event with catastrophic implications for the Phuili. The beliefs and traditions of ten thousand generations had taught us that under the Maker we are the only beings in the universe who are self-aware, who have the ability to think and create. It is an ancient concept of ourselves which made us extremely vulnerable against something we *knew* could not and did not exist.

I remember very clearly the messenger who told me about the strange ship. "What do you mean?" I asked. "How can there be such a thing?"

"No one knows. But it is there, and it has been seen."

"What is it like?"

"Smaller than a Far-Explorer, with some kind of primitive ion propulsion system. It was detected when it phase-shifted into normal space outside the orbit of Planet Seven, but was not reported until it penetrated the ComNet."

That was understandable. Although ships from the home world arrived and departed according to rigid schedule, Far-Explorers could not of course be bound by such restraints. Which explained why at first detection it had been assumed that the stranger was in fact a returning Far-Explorer whose crew could have no knowledge of schedules which had been in place for less than a generation. The strange nature of the ship would consequently not have become evident until it activated one of the robots which, at twenty diameters, form the Shouter's communications and detection network.

Not that immediate realization came to us. Even as I was being informed, it had already been presumed that by some combination of errors which in any other circumstance would have been deemed close to a statistical zero, the entire net had somehow misidentified a returning Far-Explorer.

To state that I was surprised when I was called into the First's presence and told to investigate a reported sub-craft landing is, I suppose, an exaggeration. I was after all the most junior as well as the youngest at the station, so was therefore the most expendable. Naturally, that was not mentioned as the First pointed at the map.

"It landed here, at Artifact nine thousand and three. You may take a wingship, but I suggest you do not overfly the site. Instead, land beyond that ridge so that they will not suspect your presence."

"You wish me to approach on foot?"

"I believe it would be prudent. If, as

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seems most logical, the crew of a lost Far-Explorer have returned in a ship they have had to build from the wreckage of the old, it explains the strangeness of the ship. It is also why I advise caution. We do not know how such a long separation from the home world will have affected these lost children."

"Rationalization" has no equivalent in the Phuili language. The human concept of Occam's Razor similarly has no place in our philosophy. Which is why I did not doubt that the First's unwieldy explanation—which did at least avoid the statistical improbability of a ComNet error—was the true one. Because the lost ones had probably forgotten much of the ancient wisdom, it was only fitting that I take great care.

How do I explain what happened to me when I first saw the long strangers? Frankly, it is difficult. How would a human react if he saw a crab write a mathematical equation in the sand? Perhaps that will help you partially understand, but it is far from enough. A human would be shocked, he would deny, but ultimately he yields to even the most unpalatable truth. That is your flexibility.

That is not, unfortunately, the way of the Phuili. Before we yield, we break.

I had dutifully landed the wingship far enough away that the strangers could have no advance warning of my presence. With pride that I had been selected for this delicate mission, and rehearsing in my thoughts how I would address these lost ones if circumstance made it proper for me to approach them, I ascended the back of the dune which overlooked the place of landing and eased myself into a clear viewing position at the top.

Impossibly huge, a symbol of ancient mystery, the artifact towered over me. The great horizontal bowl blocked half the sky, its supporting pylon so slender it seemed no more than a heavy line joining the base of the bowl to the ground. The artifact's shadow resembled a black lake in the desert, and on the lake's nearer shore stood a four-legged craft of strange design. At first glance the craft seemed totally primitive, clearly designed for no other purpose than to transport a bare minimum of payload with what was probably an equally primitive system of propulsion. But if the thought crossed my mind that the crew of a wrecked Far-Explorer could only have survived if they had the use of functioning sub-craft which were incomparably more advanced than the frail construct on the desert, then I promptly dismissed that thought as a flight of fancy inappropriate to the solemnity of the moment.

I felt tempted to move down, but caution held me back as I looked for those I had come to find. Because it is difficult for unaided vision to adjust to the brilliant contrasts of light and shade which are normal on the Shouter, I did not at first see those who were still within the artifact's shadow. But when they suddenly emerged into the light, casting long shadows which rippled over the uneven ground like writhing fingers pointed in my direction, I think it was then I began to break.

For a few moments I was in mental stasis; not understanding, not even caring about this thing which could not be. And then as control returned, so did an

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almost irresistable urge to go back to the wingship and return home. It would bring great shame of course, perhaps to the extent I might have to consider an early termination of myself from this sequence. But even as I considered this terrible denial of proper function, I found I could not move because stronger than my fear was my sense of duty; the knowledge that if the powers beyond the end and the beginning had intended that I should not be here, then I would not be so. Forcing my unwilling hand into action, I unclipped the far-viewer from my equipment belt and attached it to the visor of my helmet. Looking back on that moment, knowing what I thought I had just seen with my unaided eyes, I now marvel at the extreme of madness which made me expose myself to the incomprehensibility of a close-up of those beings. If it was duty, then that stern aspect of my being was guiding my muscles without recourse to my frightened brain.

Focusing was automatic, so I had no control over the rapidity with which the image snapped into crystal clarity. At first, I tried to close my eyes. Then I tried to turn away. I even wished I had the ability to turn off my mind like a lamp. Instead, like an innocent staring unwinking into the sun's burning eye, I looked.

And I shattered.

I suppose a human physician would say I experienced a mental overload and withdrew from reality. Perhaps that is possible, even for a Phuili, although such a condition is unrecorded in our Archives of Medical Science. I do know however, that when I finally recovered my senses the sun had moved half way down the sky, a measure of at least two hours. It is also certain that something had changed within me during that time, as if my horror had triggered the formation of a psychic shield. It was with no hesitation at all that I again activated the far-viewer and looked down at the strange sub-craft.

The three beings were no longer visible, so I presumed they had returned inside their vehicle. The ground about was heavily scuffed with their foot marks, and I saw several pieces of equipment linked by cable to a small solar collector.

Humans have said that what I did next was an unparalleled act of courage. It is not true of course, because I am Phuili and not human. I did what was necessary, and even that was only possible because of the protection my previously vulnerable mind had put about itself.

It was almost as if I had split into two halves, as part of me stood apart and watched with interest while I went down the slope to where the ungainly machine stood on a flat area of rocky ground. At first I walked around, stooping low under the twin windows which looked like the eyes of an enormously magnified insect. To my amazement, the energy of propulsion was entirely chemical. The two big reaction nozzles at the base and the smaller steering thrusters in the upper hull, were of designs we had discarded in a past so distant it was almost forgotten. But there was a clear contradiction—to fly and land such an unstable configuration was far beyond the capabilities of even the most experienced pilot. Which implied a sophisti-

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cation of automatic control quite remarkable by any standard.

It seemed my briefly aquired impartiality was being sundered by a gamut of unfamiliar emotions: fear, contempt, wonder, and puzzlement being only a few. What was I to do? Report what I had found and be judged insane by my friends and colleagues? Or continue what I had started, to an end I could not see and dared not think about?

Logically, for me there was no choice. These strangers, whoever or *what*ever they were, were on the Shouter and could not be ignored. Somehow my colleagues would have to be convinced of their existance, which would seem to involve—for every one of the 130 who currently staffed the base—a traumatic shock similar to what I had already experienced. Whether or not any or all of them had the necessary flexibility to accept and then to adapt to this new shape of the universe, was something I did not know. It had become terribly clear that I was burdened with a responsibility even the greatest of the Elites would hesitate to accept.

Again that impartial side of me watched as I walked in front of the machine and stood in a position from where I could be seen through its windows. The reaction from those inside was almost immediate. First I saw a vague movement within the darkness behind the transparent panels, followed by a sputtering in my helmet phones which evolved into a series of harsh syllables as my receiver found and locked in on the transmitting frequency. Not being sure how I should respond, I simply said "I do not understand," and lifted my arms in the accepted gesture of welcome.

The tapes of that famous moment have been played and replayed so many times, it is a wonder people are still interested. I suppose the "we are not alone" syndrome has been around since our shaggy ancestors first wondered about the lights in the sky, which perhaps explains the totally different human reaction to First Contact. As far as Schendist, Alcorn, and Devany were concerned, the appearance of the little alien before their lander was an inevitability which was bound to happen sooner or later. It was simply a matter of fantastic good luck that it had happened to them. So what they did next had already been rehearsed countless times in countless imagined circumstances. Unlike the Phuili, this was an event humanity had long prepared for.

Let Geoffrey continue his story. . . .

When a door opened and one of the creatures descended a metal ladder, I stood my ground like an expendable remote which was being controlled from a safe distance. My second self was still observing dispassionately as the Phuili organism waited for whatever was about to happen.

After it reached the ground, the being did not immediately move from the base of the ladder. Instead it faced me with its upper limbs lifted. The being's pressure suit was a clumsy affair which to a large extent concealed its true appearance. Nevertheless it was clearly of what we now know as the "humanoid" form, although it was at least half a height taller than I was, and with a nar-

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rower body. It was difficult to see what was behind the front transparency of the helmet, but I gained the impression of flattened features and a slit of a mouth. It pointed at itself and made a single sound.

"Uman?" I said.

The strange head bobbed vigorously. *"Human,"* it repeated, again pointing at itself.

I considered. Either its name was "Human," or it was of a race called "human." I decided the latter and pointed at myself. "Phuili."

"Fooli?" It took one step in my direction.

"Phuili," I said again, and took a countering step forward.

"Human. Barry." The being looked at me expectantly.

I was nonplussed. Although my altered mental state had enabled me to accept the existence of this "human," it was not willing to acknowledge any initiative other than my own. That it had seemed to be initiating communication with me was, I decided, an illusion born of my own confusion. Nevertheless, if communication was possible at all, I had to find out just how far this strange exchange could take us.

It had added the sound "Barry" to "human." So in turn, I said. "Phuili. Gefapronikitafrekazanzis."

As Barry Devany later explained, that explosion of consonants sounded more like a threat than simple information. It is why Devany abruptly retreated back to the lander's ladder and prepared to get up to shelter in a hurry. It was a misunderstanding which has the dubious distinction of being the first of many that have since plagued human-Phuili relations.

Of course I did not know the true reason for the human's nervous behaviour, but I did not think I needed to. Obviously my appearance had created an unexpected flaw in its concept of the universe, as the fact of its own existence created a flaw in mine. However, the overwhelming question still remained. How to explain this new reality to the one who had sent me here? The more I considered the problem, the more I began to realize that in this matter at least, communication with humans would entail considerably less difficulty than communication with my own kind.

I activated the First's frequency. "I am at the place of landing," I reported. "The creatures aboard this craft are not Phuili." There was no immediate response. Either the message had been recorded for later playback, or the First had heard and was deliberating the state of my sanity.

The Barry human reluctantly moved away from the ladder as another human emerged and came down. The third human remained inside their machine. The Barry human spoke at length to the newcomer. I found the harsh syllabic speech irritating, so I turned down the gain. Finally the new human turned and pointed at itself. "Katherine." Its voice was lighter and less unpleasant.

"Gefapronikitafrekazanzis," I repeated.

This time, I think they understood. They both walked half the distance to me and stopped. "Gefaproni—" the Katherine human began and stopped. It seemed to be having difficulty with con-

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sonantal speech. Then, triumphantly, "I know. I will call you Geoffrey!"

I wanted to be angry. To be addressed by any shortname is an insult worthy of trial and consequent compensation. But because these humans could hardly be faulted for the limitations of their speech organs, it seemed they were more to be pitied than condemned.

Limitations—

It was then I had the germ of an idea.

The notion of humans being "intelligent animals" was conceived by Geoffrey as much to protect his own people from traumatic shock, as it was as an excuse to bring two of these strange creatures to the Phuili base. Pride forces me to admit that was an unfortunate beginning for us humans, although it is apparent Geoffrey had little choice. What he experienced and survived was perhaps possible for a single individual, but not for an entire race. The tradition of Phuili uniqueness had been around for too long; it was not so much learned as inherited as part of their psyche. Consider the degree of convoluted rationalizing which allowed for the existence of an animal that can build spaceships, and the extent of that conditioning can perhaps be better appreciated. Fortunately a newer generation of Phuili are currently emerging who are not afraid to acknowledge humans as friends. In that sense, Geoffrey was undoubtedly ahead of his time.

Three days later, with the Kurt human remaining aboard the lander, the Barry and Katherine humans accompanied me in the wingship back to the base. An empty ground car was waiting for us as arranged, and I immediately drove my guests to the building which had been set aside for us. The humans expressed surprise at the base's extent and obvious permanence, and wondered why they had not seen it from orbit. I pointed at the flickering haze which hemisphered the base. "Shield diverts dust around and over," I explained in their language. "From top, softens outlines. Not see."

"You mean the concealment is only a byproduct? Not intended?"

"Of course," I replied. "Why we want to conceal?"

My facility with the human language should not be surprising. The language is simple and completely without subtlety, and with the aid of a radio link to the Computer Core I had become conversant with meanings in less than two days. Unfortunately I doubt any human will master Phuili talk. Not only is the human jaw ill constructed for its use and the human ear equally deficient, but because at birth the human mind is virtually empty and needs to be fed everything it must know, it can never benefit from the reservoir of instinctive knowledge which our Phuili young already possess when they enter this sequence.

The First joined us after the supplies had been unpacked. The humans (their sleep cycle was only slightly longer than our own) had placed their mattresses in a small alcove, their food containers close by. Although it was reasonably certain our sustenance needs were mutually compatible, it had been decided we would wait for a full analysis before the humans would be allowed to sample any Phuili foodstuff. It had also been agreed that the First would determine

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if full quarantine would be maintained, or if the humans would be allowed access to the base and its personnel. To a large extent that depended on the First's powers of persuasion. Although he himself had accepted my description of the humans as tool-using animals, there remained some doubt that everyone would accept this lesser yet still mind-twisting concept and remain fully sane.

When Averponekatupenaviziz finally entered, I knew he had already been observing the humans for some time. Nevertheless the signs of strain were evident as he stayed at the far side of the room and fixed his gaze on me rather than the vistors. He was aware of the limitations of the human tongue, so did not object when he heard himself called Avery. He had also tapped into what I had fed into the Computer Core, so was able to communicate with the humans without my assistance. But as he exchanged verbal data with them, his eyes remained steadfast in my direction.

"I am called the First because I am the first of equals," he replied to the initial question. "It is my function to point the way."

The Phuili have an odd form of hierarchy. Although there is a hereditary ruling class known as the Elites, who number less than one percent of the population, there is nothing equivalent to the formal selection of a single leader in the human sense. Instead, there is an "instinct" which in any group situation allows the will of many to be expressed through one. It is certainly true that the Phuili have an amazingly strong empathetic sense, which on occasion can even reach out to humans.

It was difficult for us all, although I think less difficult for the humans. They had always accepted the possibility of other intelligences in the universe, so had been stimulated rather than demoralized by my unexpected appearance. For us Phuili however, the mere existence of the humans threatened a crisis of first magnitude. And that was an unaccustomed burden for Averponekatupenaviziz, who was forced to bear this responsibility totally alone, without the support which is normally a First's right. As I watched and listened, I tried to aid him with my own humble singularity, sadly with little effect. I supposed fatigue and the unprecedented excitements of the last few days had temporarily reduced my ability to empath. But in desire if not ability, I remained with Averponekatupenaviziz as he continued.

"What is your planet?"

"It is called Earth."

"Humans are the premier species?"

"Yes."

"How long have humans been traveling space?"

The Barry human named a number which I translated to Phuili units. "About three hundred years."

"But that is only—" Averponekatupenaviziz turned to me. "Gefapronikitafrekazanzis, three centuries ago is but yesterday. Can a seed become a forest in only a day?"

"Ask them when they built their first star ship," I suggested. I was being cruel, but I knew it was necessary.

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"Fifty years ago," was the Katherine human's reply to that question.

Averponekatupenaviziz agitatedly ushered me into the next chamber. His distress showed on his features, his shaking hands. "I cannot believe such a thing. Yet they are telling the truth. I know it!"

"You can tell?"

He looked at me with surprise. "Of course. The sense was very strong."

"But they are aliens!" I protested. "Their emotions, their ideas—" Then words faltered, as I understood the terrible price I had paid for becoming adjusted to the humans.

"What is it? Do you have a problem, my friend?"

Averponekatupenaviziz was concerned. The signs were in his words and physical reactions; the flexing of his jaw, the lift of his hands. But the important signals, those of mind to mind, were missing. The confirmation of my worst fear came as he added, "Gefapronikitafrekazanzis, you are blank. In my mind you are not there. What has happened to you?"

I lied. For the first time in my life I told a deliberate untruth, and it cost me dearly. But he already had problems no First should ever be called upon to bear, and I doubted he could carry more. In any case, I was suddenly in the unique position of being the only Phuili who could conceal an untruth, which perhaps had potential as a useful talent as well as being a curse. "Nothing is wrong," I replied. "I believe we are both fatigued."

Again I was in that peculiar mode in which I stood apart from myself as I rationalized the possibilities. I had prepared "Avery" in advance, and he had not broken. Neither, I now believed, would any Phuili if he or she was similarly prepared. But I was not so sure how the humans would react to an official proclamation of their inferiority. In my clumsy fashion I had explained, and I think they had understood, the "intelligent animal" aspect of their introduction to the First. But would they accept a permanent relationship based on an acknowledgement of Phuili superiority? I did not know. I only sensed we were all poised on an uneasy fulcrum, that at this moment the choice between two very dissimilar futures was more in human hands than Phuili.

So I felt a great lightening of spirit as Averponekatupenaviziz, anticipating a large part of the problem, said flatly, "The others must be informed. But it will have to be done gently, in the same manner you led me to the knowledge." He touched my arm. "I am grateful for your caution, Gefapronikitafrekazanzis."

I inclined my head. "It is a difficult knowledge."

"Very difficult. So I am puzzled. How did you manage to come through this experience so unchanged? After all, there was no one to prepare you for what you found out there."

"I do not know," I replied, amazed at the ease with which I was learning to deceive. I added, "Perhaps it was meant to be, for whoever was the one to contact the humans."

I knew Averponekatupenaviziz was of somewhat a mystical nature, so it did not surprise me as he nodded thoughtfully. "I will assemble our colleagues and prepare them. Some may already

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have seen our guests from a distance, so it is better they know the truth before their imaginations conjure something worse. You and the humans will remain concealed until I tell you otherwise."

I acknowledged silently, then returned to the humans. I did not know enough of their language to be subtle, so instead I decided to use an analogy. "You breathe our air," I said. "It is difficult?"

The Barry human replied. "It sustains us. But it does have an unpleasant odor."

That was logical. The odds against their native atmosphere being precisely the same as ours were astronomical. So what was "different" to their organs of smell could be, I supposed, unpleasant. I pointed at the cylinders they had brought with their other supplies. "Why do you have those?"

"They are for emergency use. Otherwise, in time we expect we will get used to—" His face wrinkled. "—your gases."

"Because it is necessary?"

He nodded. I was learning not to be surprised at the similarity of body gestures; for instance the nodding for acquiescence, the sideways shaking of the head for a negative. Even the lifting of both corners of the slit-like mouth was clearly a smile, although the barking humans refer to as "laughter" would probably be accepted by my colleagues as proof of their animalistic nature.

I said, "If you or any of your species wish to continue your presence on this world, it will be necessary that you accept other unpleasant but necessary things."

"What things?"

"Most important, that you continue to recognize that the Phuili are a superior species. But also that you accept limitations of your numbers and activities on this world, as well as permanent status as subjects for Phuili scientific study."

They stared at me. I knew my use of their language was still inadequate, that I had difficulty with many of the sounds. But I also knew they understood the content if not the details of my message, and that the rising pink flush on their exposed areas of flesh was probably resentment.

"Why?" the Barry human asked at last. "What gives you the right—" The female stopped him with a sharp word.

I tried to explain. Much of what I said was relative to what I had learned about the human species, which made it new even to me—and consequently difficult.

"The Phuili are an ancient people. Much of what we are is therefore ours from the moment of birth, and is not learned as you know learning. Therefore we have certain beliefs about ourselves which cannot be changed without risk of insanity. You humans may be what you think you are, but to the Phuili that can never be."

The Katherine human said shrewdly, "Forgive me if I am wrong, but I have the feeling *you* believe we are more than inferior. Geoffrey, doesn't that conflict with what you have just told us?"

She had made a painful point, one I knew I had to answer. "There is no conflict. You see, this Phuili is insane."

They looked at each other. Then, "I don't understand," the Barry human said puzzledly. "You seem rational to me."

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I tried to explain. Using what I knew of their language was like trying to describe sight to one without eyes. "We have a sense. It is like—" I struggled, continued, "Imagine being able to perceive between hot and cold without having to know the degree of hot or cold. Or recognizing the optical band from the radio band, but not individual frequencies." I tried to think of other similies, but was forestalled as the human female said with a smile,

"I am guessing of course, but I think you are talking about empathy: The ability to sense mood as distinct from individual thoughts. Am I right?"

I marveled at this one's powers of discernment. "Yes, you are right. Do humans have it?"

"Not to the extent it can be trusted. Not without some physical signs, at any rate. As far as the mind-to-mind part of it is concerned—" The small, strange eyes opened wide. "Is that what you have? Like telepathy?"

The word was unfamiliar, but I thought I understood. "The method of transmission is not important. It is the content. For the Phuili, words are the embedded fruit in a cake. It is the cake's whole taste which is the message, not merely the sum of the fruit it contains."

"I think—" The female came closer to me. There was sympathy on the strange face, in the moistened eyes. "You have lost the taste, haven't you?"

I sighed. "Yes. At first I thought it was fatigue. But I knew otherwise when Averponekatupenaviziz told me he had no problem reading your sincerity. I had sensed nothing."

That seemed to disturb the Barry human. "Are you telling us he—?" His oddly articulated fingers clenched and unclenched. "Dammit Kath, we won't be able to keep anything from these people!"

The Katherine human nodded. "It certainly seems that way. And if the Phuili know when we lie, then there is obviously no point continuing the charade of inferiority. Not when any one of them can sense it is only an act."

"Ah, but in that case what is sensed is not important." After a moment of hesitation, I added solemnly, "Does it matter, if in its ignorance the leaf thinks it is equal to the flower?"

It is ironic that as the Phuili increasingly acknowledge that perhaps the leaf IS equal to the flower, they must necessarily also come to terms with the fact of human hypocrisy. Because in the psychic sense we are insulated from each other, even the best of us practice deceits which to the empathetic Phuili are impossible to ignore, yet almost equally impossible to accept. So which will come first, I wonder? That the Phuili will accept what we say? That we humans will MEAN what we say? Or that crabs will write equations in the sand?

I would not be overwhelmingly surprised if, before anything else changes, there are reports of mathematical crustaceans.

It would have taken ninety-three minutes, as humans measure time, to fly to the location of the human lander at Artifact 9003. But at sixty minutes, I had to crash land the wingship.

It was a bad place for such an emergency, in a depression criss-crossed

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with gullies and littered with boulders. But somehow the four of us survived, although we were all injured. Pakegoknerfronakipilasis was the worst, with a crushed leg. Least injured was the Barry human, with cracked ribs. Fortunately we had enough sealant to restore the integrity of our pressure garments, although much of our air supply was gone before the last rent was sealed. We were alive, but our situation was not good. The wingship was damaged beyond repair, the communications module had been torn out at first impact, and we were considerably off course because I had diverted to avoid a dust storm.

"It is unheard of," the one the humans called "Packer" said peevishly. "There has never been a failure like this." His look, as he glared at the humans, was accusing.

The Barry human moved uncomfortably. "What did he say?"

"He believes you humans are to blame."

The Barry human shrugged. "So he doesn't like us. It's why he came, isn't it?"

There was no need to reply. When Averponekatupenaviziz had failed to gain acceptance for the humans, it was inevitable that the successful spokesman for the opposition accompany us to make sure the humans left the planet. I was wary of Pakegoknerfronakipilasis. Whatever emotion had been powerful enough to overcome his loathing of these beings to the extent he would tolerate their close proximity, made him unpredictable. He knew of my insanity, so was aware I could not read his intentions. Neither, of course, could he read mine. Not that either advantage counted for much, especially considering the unexpected nature of the terrain and our injuries.

The Katherine human made a noise of pain as she lifted her upper body to an upright position against a boulder. Although the injuries to her lower limbs were not as severe as the damage to Pakegoknerfronakipilasis, she was equally as imobile. "We must take stock," she announced.

My own damage was that of a dislocated upper limb which was also fractured. Although the pain was severe, I disciplined it to a lesser status as I asked interestedly, "What is stock?"

"A list of everything that affects our situation. What we can use to improve it."

I translated for Pakegoknerfronakipilasis. "An illogical hope," he said. "It is merely further proof of what we already know; that the humans are primitive beings who are not intelligent enough to know they will soon die."

Despite her pain, the human female made a laughing noise. "If hope makes us primitive, then by golly we are primitive!" She looked at the other human. "How is our air supply?"

"Not good." He gestured at the single cylinder he had pulled from the wreckage. "With that and what we have on our backs, four or perhaps five hours at the most."

"Much less for us," I said sadly. "Phuili do not allow for what we believe will not happen."

"How long can you keep going with what you have?"

"By your time, three hours. No more."

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The Katherine human changed the subject. "Communications?"

"We're communicating, aren't we?" the male retorted. I was learning a little more about that strange type of speech humans call sarcasm.

"Yes dear, but unfortunately only with each other." The Katherine human turned to me. "Geoffrey, how powerful is your suit radio?"

"The equipment we carry is very limited," I informed her. "Always, we relay through the long range sets in our vehicles."

"My god, talk about bare bones! Don't you people have emergencies?"

"It is not efficient to design for anything more than an intended use," I told the Barry human. I pointed at the slender rod which extended above his shoulders. "Can you talk further?"

"It depends—" he began, then stopped. He carefully got to his feet and turned toward a high promontory which extended into the depression southwest of us. "How far are we from the lander?"

I told him.

"Hmm. About two hundred klicks."

The Katherine human was also staring at the promontory. "Do you think it is possible? That is a tough climb."

"With no guarantee there will be line-of-sight when I get there." The Barry human shrugged. "But it's all we've got."

Now I understood. "It will take much energy. You will need more oxygen than you have."

We looked at the spare cylinder.

"What are the beasts planning?" Pakegoknerfronakipilasis asked me.

"Be careful, or they will take what little of life remains to us."

I felt an illogical annoyance at my Phuili colleague, although I knew his warning was proper and should be heeded. But my insanity was making me consider both sides; a broadened vision as remarkable in its own way as the perception I had lost. "That one," I said, pointing at the human male, "will climb to that high point, and from there will attempt to communicate with the human who waits in the lander at Artifact nine thousand and three. It is the only way help can be brought to us in time."

"In time for what, Gefapronikitafrekazanzis? If the beast takes the extra air container, I agree he may survive long enough to make his signal. But for the rest of us, including the female, it answers nothing."

His argument, although hostile, was logical. I translated for the humans.

The Katherine human said, "There is still a way."

"Beasts" are programed for self survival. If danger threatens, they try to avoid it. They certainly do not put themselves into increasing jeopardy merely to increase the chances for survival of creatures of other species who happen to share the same predicament.

Geoffrey was sure in his own mind that humans are more than beasts. Even more than "intelligent animals," although he was willing to accept the lesser status if only to gain for humans

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some kind of official Phuili acceptance.

Unfortunately, Packer and the other hard liners had successfully forced a denial of that acceptance. But of all the Phuili, if Packer could be persuaded otherwise, success could still literally be snatched from the jaws of failure.

I do not know if Geoffrey's thoughts were running along those lines as he piloted the wingship which also carried Packer and the two humans. But I suspect there is a clue in his comment about the "unexpected" nature of the terrain.

Consider.

If, before the humans were gone forever, they could be presented with an opportunity to demonstrate unbeastlike compassion and inventiveness, even an extremist such as Packer might be persuaded to change his mind. An emergency landing, at a place where in any case they would be "found" after a decent interval of time, could perhaps stimulate such a demonstration. But even the most contrived scenario can be overtaken by events.

Such as a dust storm and an unplanned course correction . . .

The First summoned me as soon as I was sufficiently recovered. "You are well," he said without preliminary. "Pakegoknerfronakipilasis is not. Do you know why that is so?"

I inclined my head. "He is ill for the same reason I am insane."

"The humans?"

"It has to do with them."

"I see." He considered a moment. "I am not insane. Neither am I ill. Yet I also had contact with those beings."

"You were prepared. Also, you are the First."

He looked a question.

"The unexpected is difficult. Yet the unexpected does happen. You hold your office because of all of us, you are the most—" I struggled to find a word. "—flexible."

"An interesting concept. You learned it from the humans?"

"I believe it is what makes them successful as a species. However, there is a strange side to their character which seems to counter that advantage."

"Explain."

"Logically, by eliminating the two Phuili, the humans could have gained enough extra air to guarantee their own survival. It would have been, after all, a clear case of an invocation of the law of necessity."

"An ancient and honorable law," Averponekatupenaviziz agreed. "So why wasn't it invoked? Compared with you and Pakegoknerfronakipilasis, the Barry human was relatively undamaged. So surely he could have done what was necessary."

"That is true. And if the choice had been an absolute one—such as, for instance, matching the certain death of four against the probable survival of two—then I do not doubt the Barry human would have properly invoked the law. But because he and the female perceived a statistical possibility that all four of us could survive, they selected a course of action which not only reduced their own chances, but which also placed the human female into a greater jeopardy than before."

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* * *

I will go to sleep, the Katherine human had said after the male departed with his own tanks replenished from the spare. She then did something with the control unit on the front of her pressure garment, and promptly lapsed into an unconscious state.

Pakegoknerfronakipilasis and I were completely mystified. Finally, his contempt suggested an answer. "She has turned off her mind because she fears the pain of death. For her kind, there is clearly no next sequence. Their end is a terrible finality."

There was a logic in his pronouncement which chilled me. But if he was correct, then why were we still alive while the Barry human was a distant speck plodding toward a doubtful destiny?

I went to the Katherine human and touched the chest area. Her breathing was slow. "There is possibly another explanation."

"Be brief. Talk uses air."

"It has to do with the air." Using my sound arm, I dragged the spare cylinder to Pakegoknerfronakipilasis's side. Then I produced what remained of the pressure-sealant. "With your two good arms, I think it may be possible to adapt this alien fitting to replenish our own containers."

Although his prejudice was extreme, "Packer" was too intelligent not to realize this life-extending opportunity. He accepted the sealant without comment and worked painstakingly until at last the extra gas was feeding into our helmets. Then, as he returned his attention to our situation, his attitude seemed to change. "Because the female is unconscious," he announced, "she therefore breathes less."

It was, of course, a statement of fact. It was also an uncharacteristic concession which hinted that perhaps my gentle prodding had turned him in a direction his rigid inflexibility of nature would not otherwise allow. Fearing to disturb this new chain of reasoning, I remained silent as he continued,

"The male took some of the air, because without it he will certainly exhaust his own supply before he reaches his destination on that height. Although he could have taken the entire container and left us nothing, he chose not to."

I was greatly tempted to lead him further toward consideration of the unthinkable. However, I restrained the impulse and instead said simply, "That is true."

"That the female turned herself off, or that the male did not take or exhaust the container—each by itself can be considered a fortunate coincidence from which you and I have benefited. Taken, however, together—"

Pakegoknerfronakipilasis was suffering. His speech had become irregular, his vocal chords hoarse as if from too much use. I had been through a similar experience, so was aware of the schizophrenic turmoil of his thoughts —caused, in his case, by the extremes of his innate conservatism versus his machinelike ability to gather and analyze facts. Because humans were irrefutably inferior, it was equally certain that they were incapable of behavior

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beyond that dedicated to simple self preservation—although there was a slight statistical probability that the behavior of a single human might be misinterpreted as compassion for others not of its kind. Unfortunately, the impossible juxtaposition of *two* of the creatures simultaneously displaying such altruism, represented an insane conflict of absolutes that Pakegoknerfronakipilasis's own implacable logic was forcing him to confront without hope of justification or compromise.

In a similar situation, I had shattered. But his was a different, more deliberate personality. He withdrew like a threatened flex-snake shrinking itself into insignificance.

Pakegoknerfronakipilasis crumpled.

After I had finished describing the events in the desert, the First lapsed into a deeply contemplative silence. Sharing the silence but not the contemplation, I waited. Although I was learning to accept the gulf which for the rest of my life would isolate me behind the lesser senses of touch and sight and hearing, moments like this would always be a painful reminder of my handicap—and there would necessarily be many such moments, as long as I continued to serve the cause I had precipitated. Which I knew I must.

Finally, Averponekatupenaviziz sighed and looked up. I think he grieved for me, even as we both knew my loss was as nothing compared with the future waiting to be born within this austere room deep in bedrock. "Pakegoknerfronakipilasis endlessly repeats the argument which destroyed him," he mused, half to himself.

I nodded. "It is a sad thing."

"He is apparently not aware of what is happening. So he does not suffer as you do, my friend."

I bowed my head. "I have a consolation. I still function."

"Gefapronikitafrekazanzis, what you have is more than that. You are unique among Phuili in that you are restricted to sensing the external world as humans sense it. That may be of great value."

It was like a ray of light through storm clouds. "We are to continue a relationship with humans?"

"We must. Unfortunately, they share our universe."

"It will be difficult to change what is already decided. Pakegoknerfronakipilasis has many supporters."

"Exactly."

If I had been normal, I would have immediately recognized the First's meaning. But already I was using deductive reasoning to an extent I would have thought impossible before the humans came, and after only a slight hesitation I asked, "Are you sure exposure to his words will not push others over the edge?"

"They will be prepared. They will be reminded of their mentor's rigidity, of the fact that proof of anything contrary to his beliefs would in any case have sufficed to destroy the foundations which supported his concept of reality."

Despite the tragedy we were discussing, it was difficult not to be heartened by its positive implications. "Instinct being proved as intelligence," I said, "must have been as shattering as black

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being proved white."

"You remain perceptive, Gefapronikitafrekazanzis, despite your sickness. Of course, you and I know the truth is somewhere between, and I am certain our colleagues will accept that truth when they realize humans represent a new classification of being. For most of them, I suspect the scientific challenge will be irresistable."

"The humans are proud. I am still not sure they will accept a lesser role."

"You have already told me they are an adaptable people. They are also realists, as we must be. In other words, it will be your function to prepare the humans for that lesser role—as I must prepare our own people for what is, I believe, a new universe."

Thus, quite abruptly, the document ends. It is, of course, a matter of record that Barry Devany did finally contact the lander, although by the time he was picked up he was almost dead from oxygen deprivation and took months to recover. On the other hand, Katherine Alcorn's fast recovery so impressed the Phuili, that "stasis" drugs and the means to administer them are now as much a part of their survival equipment as of ours—which has a further significance in that it implies a Phuili admission that even their advanced technology can be prone to error. Geoffrey, as the official Phuili representative, was assigned to the Permanent Earth Unit which was ultimately established on the Shouter, and it was only because of his ceaseless activities as mediator—on Phuili itself as well as on the Shouter—that PERU survived its initial growning pains. Even long after that critical first decade, humans and Phuili alike still refer to his records to resolve disputes.

Perhaps Geoffrey should have the final word. What follows is from a letter to Clarence Van Standmeer, PERU's Assistant Research Administrator during that period. It was written shortly after Geoffrey returned to his home world for the last time.

Read it. I suggest all of us can learn from the vision of this great soul.

We will not meet again. But that is as it should be, because change is after all a vital component of the living universe. Nevertheless, the problems will remain. Our successors will have to resolve those problems as they arise, or all that you and I have worked for, for so long, will be as nothing.

We are so few, those of us of both races who seek to unify our thrust into the universe. But I sincerely believe there are forces which have already predetermined that unity of purpose. Surely it is no coincidence that the Shouter, our gateway to the galaxy, is located almost precisely equidistant between your homeworld and mine. And although we are so different, what are those differences except images on both sides of the same coin? Together, humanity and Phuili are greater than their separate parts. Apart, we are less than that sum.

Much less.

My friend, I need hardly remind you of the continuing threat to your species from uncontrolled misuse of its profligate technology. And I know you have studied the Phuili enough to suspect, as I do, that our fate is the ultimate stag-

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nation of an inflexible heritage. That two such self-destructive extremes can be melded into a vital new force, may seem impossible. But it is necessary, if only for survival's sake. Although I am sure there is more to a unified future than mere survival.

To paraphrase what a wise human once said, this Phuili has "walked a mile in human mocassins." Perceiving the universe as humans perceive it, I discovered to my astonishment that I had gained more than I had lost.

So should it be for all of us. Because only then will every Phuili and human at last realize that in all things essential, we are the same.

Your friend,
Geoffrey ■

ON GAMING

(continued from page 111)

weaknesses. These are quite important since some of the stalwart crew tend to crack a bit under pressure, while others are obviously under-qualified for their jobs.

After you select the crew, you are at the Communication Console of your freighter. The console displays your ship's status (shields, weapons in use, current speed, etc.) but you need not worry too much about that. You'll be far too busy giving orders to your crew. The top of the console displays the view-screen of the ship and the communications screen. Here you'll see your different crew members as your trip progresses, issuing orders to each department and acknowledging their messages. The visual display is remarkable. As you select weapons, for example, Al "Bull's Eye" Zott's picture will appear (that is if you selected him), ready to display the current status of the weapons, or to get new orders.

The game is a madcap juggling act as you move from department to department trying to stay on top of things. First you check in with Navigation to set your course and speed, then off to Scanning to look over some unidentified ship, then quickly to Weapons to give firing orders. If your ship is damaged, it's a quick flip to the Repair department to activate the robodroids. Then the engineer might break in with some critical message about the engines. And as the game grows increasingly frantic, your crew members begin to fray about the edges, some of them taking matters into their own hands, while others freeze into total inactivity.

Too much confusion and, before long, your ship is boarded by pirates and the mission is over.

Psi Five Trading Co. was designed by Mike Lorezen, who created a variety of games for both Atari and Activision. These experiences have led him to create something that is unique, a game that stretches the limits of what was done previously. *Psi Five* is difficult to play, with an almost dizzying array of tasks to attend to. But its lively, entertaining graphics and unusual game-play (all handled with a joy stick) make it a really special SF adventure. ■

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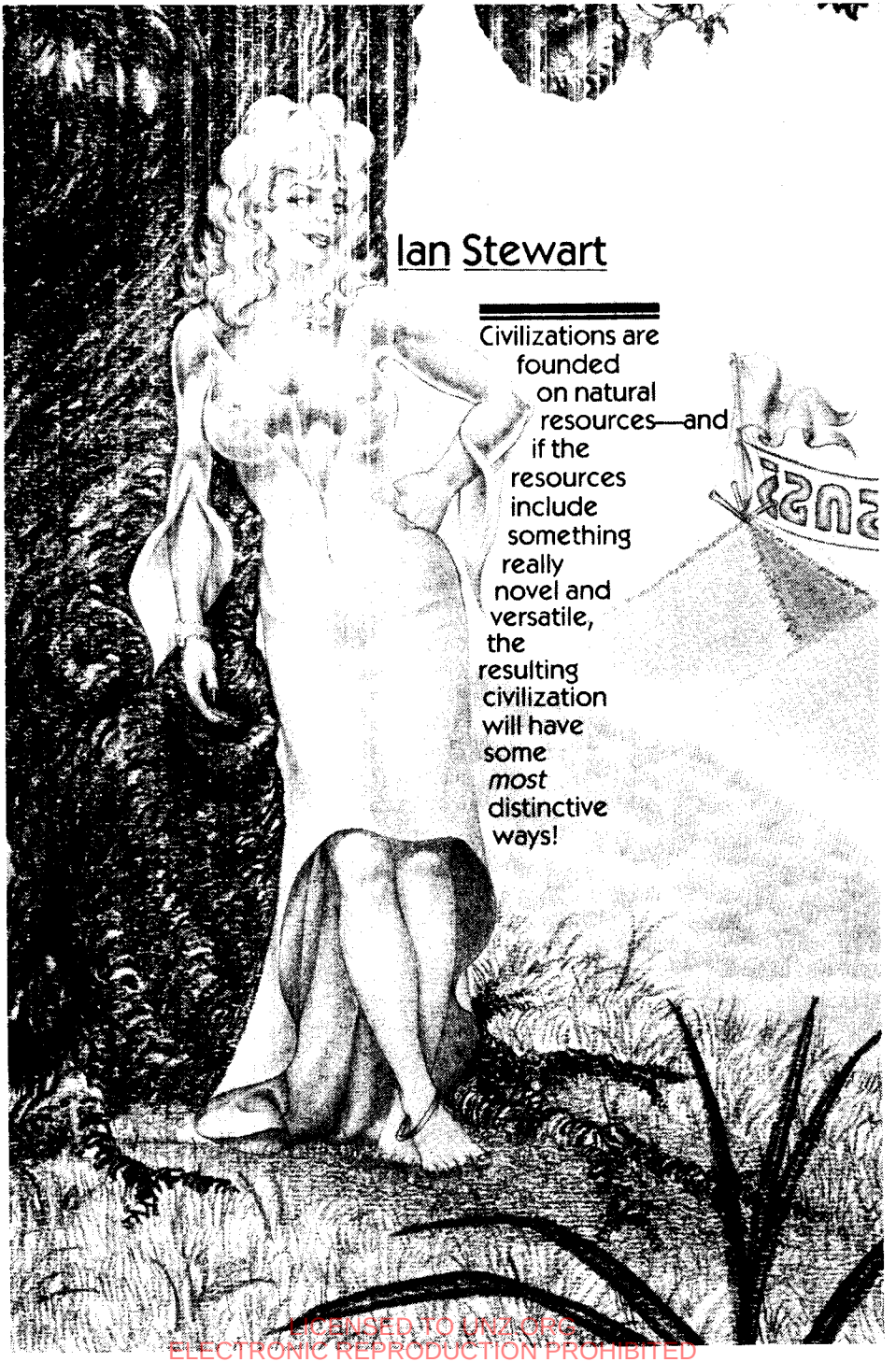
Ian Stewart
Civilizations are founded on natural resources—and if the resources include something really novel and versatile, the resulting civilization will have some *most* distinctive ways!

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DISPLACED PERSON

William R. Warren, Jr.

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The room on the second floor of the *Limping Wozzet*—named for a lumpish creature of local breed that resembled a yellow pig and spent nine tenths of its time asleep and the rest swilling or in rut—was cramped and dusty, with low skullcracking beams that sagged and smelled of dry rot; but it would suffice for a few days. It had cost twoscore *skint* for three nights, paid in advance to the doleful potbellied landlord. They had holed up at the inn in the hope that the hue-and-cry would soon die down. Their finances wouldn't let them stay for long, but a small celebration was in order.

"Life," Marco Bianchi declaimed through the crumbs of a crayfish pasty, "looks rosier on a full stomach. And even if the *Lumpen Whatsit* isn't exactly the lap of luxury, it's a lot better than being hung by the feet for perversion." Marco generally preferred to look on the bright side.

"Ha!" said the Honorable Lady Elzabet of Quynt scornfully. "And whom do we have to thank for courting that particular danger?"

Marco had got a piece of shell caught between his teeth. "It's no good sitting on your dignity, Elza—you joined in too," he protested, the words oddly muffled by his finger.

"Not in the public orgy. A lady may shed her inhibitions in private."

"It *wasn't* public. There were just rather a lot of people."

"Including the Deacon's spy."

"For all we knew, *Sadruddin* was one of the Deacon's spies. I didn't notice you worrying about that. In fact, it was *you* who suggested a threesome." Marco poured himself a third mug of jarbly, and leaned back further in his chair.

"It was *not*, it was you," said Elzabet. "Anyway, Sadruddin is a gentleman." *Unlike some others I could mention*, her sharp glance indicated. "I joined in against my better judgement because you wanted me to. Are all mathematical engineers as randy as you are?"

"You joined in," said Marco, "because you were fascinated by Gus's legs. Truth?"

"Oh, very well, if you insist on having it your way, who am I to contradict you? If it massages your puny ego to imagine that I had a passion for Augustine Tambiah Sadruddin, and lets you offload some of the guilt, why not?" Suddenly she grinned. "Gus *does* have nice legs, Marco."

"Yes, and he may well end up hanging from their extremities if he carries on the way he's going."

"True," said Elzabet, sobering at the thought. "But that's his problem, Marco. Where do we stand?"

Marco nibbled his fourth pasty. "Well, we eluded the Personal Guard and the Embassy people. Shaaluy has no jurisdiction here in Samdal, and the local authorities have no complaint against us—"

"We attacked a watchman and tied him up."

Marco dismissed the matter with a shrug. "All he saw were two faceless guards in uniform. I doubt that his Reverence the Deacon is much revered here in Samdal. They won't trace it to us, or if they do, they won't care."

"I suppose so," said Elzabet dubiously. Marco's optimism had proved to be unfounded before.

"That was a neat escape Gus devised

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for us. Smooth as a Squamish dancing-girl's—"

"It wasn't *that* smooth," Elzabet interrupted. "For a start, we've lost contact. He was improvising, using one of *his* escape routes. Anyone plotting at the level he does will have *several* lined up."

"It's a pity he didn't have a bit more *cash* lined up," said Marco. "Not for nothing is the local currency called the *skint*."

The more angry the Deacon of Two Mountains was, the quieter his voice became. His Chaplain had never heard the Revered Tanling Denison Bancroft Geoffroy DeLameter speak so softly. Augustine Tambiah Sadruddin had recently been admitted to this inconspicuous but delicate post, when the Deacon had noticed the subtlety of the aristocratic young priest's thinking.

"You have disciplined Kurpershoek." It was not a question. Nobody would dare to disobey the Deacon even in his milder moods.

"Six bones, Reverence. One for each missing prisoner."

"To lose four to the Vain Vaimoksi was careless. To lose the other two—"

"With respect, Revered One, I believe Kurpershoek is merely incompetent." *Better to defend the man than to appear eager to accuse him of treason. The Deacon is not lacking in cunning, it would be easy to arouse his suspicion.*

"Has any trace of the strangers yet been found?"

"None, Reverence. Agents are searching. The two who escaped from the shadress will I am sure be found. The four captured earlier by Vain Vaimoksi—"

"—Will never be heard from again. A pity, they interested me. Unusual people, do you not think?"

"Their clothing—"

"—Resembles nothing that our agents in the Lands of Abomination have ever reported. They speak G'laxic, but with an outlandish accent. They carry many strange objects. Soft bracelets that cling to their wrists, seemingly continuous with the skin . . . and these." He gestured toward a low table on which rested an extraordinary collection of artifacts.

Maps on inferior paper—but tough—of the whole world. Cities marked but unnamed; elaborate color, to no clear aesthetic scheme; innumerable tiny annotations in a brutal but perfectly regular script, spelling impossible words. (What was PETRLM RESVS: NO EXPLOITN, for example?)

A chart of the night sky, with *numbers* against half the stars.

Bars of some chewy substance, in quantity. Food?

Three tents of unwoven fabric—the skin of a deep-ocean fish? If so, the fish was well protected.

Assorted fine rope, fish hooks, and other obvious survival gear. A pack of what might be medical supplies, a few outlandish.

Six impossibly Handbook stunbeams.

And a blobby object with a brown organic gleam. Sadruddin smiled inwardly at the latter, recalling what had happened when it had first been brought before the Deacon. At his orders a guard captain had pointed the fruiting end at the wall, and squeezed.

The plant—if plant it were—had re-

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sponded by emitting a stream of some sticky substance, silken-thin and of variable hue. They had watched in awe as a tapestry built up against the wall in a furry illusion of depth. Strand by strand the bulb had built a picture of the breakup of a moon—the glow of its still-molten core visible through gigantic cracks, the cloudy planet *above* the viewer, the purple flaring sun to the left, and the sharp ineffably distant points of light that mean the stars. Behind them the black was absolute.

"This is not what we are told," DeLameter had said finally, "of what is beyond the sky. Where this plant grew, I will not think."

Later Marco had tried to explain it to Sadruddin. "It's an aer-O-web, for generating clothing on a body. Pointed at a wall, it responds with tapestry. The default option is to reproduce its previous design. Sam, our navigator, painted the parlor just before we crashed."

Madness.

Abruptly the Chaplain noticed the silence and came out of his reverie. "My pardon, Reverence. These objects disturb me. But other things disturb me more. The outlanders described *Magog* not as a humanoid giant but as a great structure of metal."

"You are suggesting, I think,"—the Deacon's green eyes looked coldly into his own—"that some group among the Divided has gazed upon the *Handbook* and found the key to certain of its Mysteries?"

Sadruddin swallowed, but did not take the way out that the Deacon was offering him. "No, Revered One. It seems to me more probable that they have their knowledge independently." He hesitated. "I think that they are what they claimed to be. That they come from the stars."

He waited for the usual reaction of the High Priesthood to such peasant literalism. But DeLameter said nothing. Sadruddin tried to support his case. "The animadepts think that not all of the *Handbook* is allegory. There is a clear division of species. On the one hand, humans, plus the few species brought by *Magog*: white bones, red blood. On the other, the countless golden-boned violet-blooded creatures of this world. It is the same with plant-lore. The edible plants are few in number, and conspicuously they do not breed by *syntei* but by unconnected seedings. Evidence of distinct origins.

"And thirty-three nights ago something . . . physical . . . fell from the sky in a red blaze."

"Yet," said the Deacon speculatively, "no material trace was found."

"No, Reverence. The Prior of Quantry tells me that the flames fell into the Chamsyn Sea, and the rest passed beyond the Eastern horizon. But he saw *pieces*, falling apart, while the townsfolk saw only a fiery omen on the night of Omolu."

Deacon DeLameter's eyes were ice. "Your theories are doubtfully supported, and probably heretical. However, *if* there is any substance to them, the implications . . . You will make every effort to recapture the prisoners."

Sadruddin shuddered, for himself as much as for the strangers.

The two fugitives lay low in the inn and tried to pass the time in their own manner. Marco sat in the middle of the

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dusty floor and drew diagrams with his fingers. His tongue stuck out of the edge of his mouth in concentration. He muttered incomprehensibly: "Second fundamental coform . . . equiharmonic projection? No, silly, it isn't smooth on the linearized kernel . . ." Elzabet composed herself on the rough pallet, lost in daydreams. Marco swore and brushed a hand across his elaborate drawing, obliterating it and raising a small gray cloud.

Elzabet leaned her chin on her elbows. "Are you *still* trying to puzzle out how the syntei work?"

"I'll get it eventually," said Marco doggedly. "It ought to be a straightforward application of Heegaard Calculus—but it isn't. There's some funny twist."

"I fail to comprehend why you wish to apply mathematics to a *plant*."

Marco rose to the bait. "Elza, you can apply mathematics to anything. Of course," he added in a rash of honesty, "you don't necessarily get a sensible answer, but that's another matter. However," he continued doggedly, "if you can tell me a better way to understand a planetful of vegetable matter-transmitters, go ahead."

Elzabet looked at him scornfully down her aristocratic nose.

"The syntei influence *everything* on this planet," Marco went on. "For millions of years they've controlled every aspect of evolution. Some vegetable genius stumbled upon the idea of separate buds that remained connected to Mama by a wormhole in space . . . and knocked the stuffing out of the competition. A syntelic plant could thrive in a desert with just one component on moist ground. By shedding damaged parts it became almost indestructible. Then . . . the animals got in on the act. They learned to use the wormholes as shortcuts."

Elzabet sighed and rolled on to her back, to stare at the wattle ceiling. "I still don't see that. I mean, why you can get through the wormhole from *outside* the plant."

"Elementary topology. With a wormhole ending at two planar discs, you have *four* sides to connect up. Two get used up joining the plants together. By symmetry, the other two are joined as well—I'd imagine there's a conservation law involved. So you get a—well, a 'gate'—from one region to another. Which the locals call a *synte*, plural: *syntei*.

"So the animals learned to use the gates. Then the plants learned to beat the animals at their own game. Soon they developed full-blooded symbiosis. And neat gadgets like those parasitic plants whose fruit fastens to the animal's stomach linings, the one Tinka Laurel ate by mistake and nearly died from. Or that multi-part gravity-shredder that got Sam's pony on the way to Two Mountains—"

"Ugh. That was horrible! The poor animal just wanted a drink—"

"—But the pool was the top end of a synte, the bottom end was hundreds of feet below, and the compressed gravity gradient pulled it through the moment its nose broke the surface. Then that same gravitational stress tore it to shreds, so the plant could feed easily. And that's *another* conservation law. Potential energy. If you lose height through a synte you gain velocity—or

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heat. Trying to go up against the gradient is like hitting a solid wall—except you can see right through it. There's an entirely new ecological device, obeying its own bizarre laws, and it's in *everything*. It makes Qish different from every other planet in the universe. And then, to compound the effect—"

"About a thousand years ago the colony vessel *Magog* crash-landed on Qish and the would-be colonists woke up on a world where matter-transmitters grow on trees."

"Literally. So Qishite technology followed a line of development that you won't find anywhere else. No long-distance mechanical transport. Roads mostly short and bridges small, for local transport where it's a waste of time to break things down to the size of a large synte aperture. Few machines. Those that do exist are rudimentary and most make use of syntei. Heavy emphasis on botany, breeding plants for special tasks. Breeding for size—the stability problem places an upper limit. Treatment methods for dead syntwood to preserve the wormhole property. Endless syntelic gadgets. *Falasyntei* for communication, with a drum-like skin across the opening." Marco, having got into his stride, was now in full flight. "*Wasyntei* that let you fish from a barrel in your own garden. *Kolosyntei* instead of holovision. Drop a stone through a gravity gradient and you've got a gun. A rock amounts to heavy artillery. Whole economic structures build up. Control an intercontinental *wyzand* and you can name your price. Which, incidentally, means that transportation on Qish is no more free than anywhere else in the galaxy. Political systems evolve around economics. And then there's the elevation problem—you can go a thousand miles if you stay at the same height, easier than you can go twenty yards up or down. Slopes acquire enormous strategic importance.

"And more personal possibilities. You can scratch your own back, touch your right elbow with your right hand, chew the back of your knees. Social conventions can run the gamut from rigid prohibition to uninhibited freedom. The sexual permutations are limited only by your imagination—"

"—speak for yourself—"

"—and the number of willing—"

"—or unwilling—"

"—participants—"

"—which is how you got us both slung in the pokey. Because the Church of the Undivided Body does not permit perversions. To Two Mountains *any* bodily use of syntei is a perversion, but you had to go the whole hog."

Marco grinned. "As well be hung for a whole hog as half a hog. We're alive, undamaged, and safe in Samdal where the customs are more relaxed."

"That's marvelous. I feel wonderful." Her face belied the statement. "No I don't. I keep wondering how Samuel and the others are managing."

"Not so well, love," said Marco softly. "The Vain Vaimoksi are cruel mistresses, by all accounts."

"There's nothing we can do, is there?"

"Right now—no. The best thing we can do for them—and us—is to carry out the original plan. Get to Wevory, find the concealed da Silva beacon, and fetch help. And to do that, we need transport—which, even on Qish, means

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money. A commodity of which we are suffering an unaccountable shortage."

Elzabet pursed her lips in concentration. "I have it!" she announced.

"Great! What?"

"We find you a job."

"*Me?* I thought you Danxish women were keen on sexual equality."

"Not at all. We prefer to have our men provide the muscle-power while we do the brainwork."

"But Danx is a hotbed of female emancipation! Not that I'm objecting, I think it's an excellent idea, myself. In fact I'd encourage you to—"

"The Danx peasant-women may be in favor of emulating their good-for-nothing menfolk, but I can assure you that we aristocrats have no such ambitions. We got *superiority* long ago—who needs feeble *equality?* Anyway, I don't see any signs of female emancipation on *this* continent of unbridled freedom and licence. I'll take a job too, if I can find one, but you're in the front line."

"I hear and obey," said Marco. Elza was fine until she got on her high horse—which happened too often. "But Mother never told me it would come to this."

Skills that would have earned Elzabet or Marco employment on any of the developed worlds of the Concordat were useless on Qish.

"We'll have to live by our wits," Marco had remarked.

"On present performance, we're likely to starve, then," said Elzabet sourly. However, in the event, it was Marco who put them on the right track, even if it was Elzabet who clinched the deal.

"Elza, what's a *khanatta?*"

"I thought you were the linguistic genius. Isn't it a vinegar-pot?"

"No, that's a *canetta*. And I don't think that Mahmool hep Hazaar Dickensohn would be celebrated for her Grand Vinegar-Pot."

"Marco, dear," said Elzabet, "what are we talking about?"

Marco indicated a nearby tree, upon which was pasted a hand-lettered broadsheet. He had seen several earlier, on walls and doors as well as trees. *The Grand Khanatta of the celebrated Mahmool hep Hazaar Dickensohn*. Some discreet enquiries resolved the mystery: a *khanatta* was a traveling roadshow, something like a circus but intended for an adult audience.

Marco pointed out the implications with growing excitement.

"I'm a pretty good amateur magician. I reached the fourth rung of the Suufi flight of the Magic Ladder when I was studying engineering. Maybe the circus could use a conjurer with a pretty assistant. You show the leg and I'll do the work."

"Ordinarily I'd object to that division of labor as unbefitting the dignity of a Danx gentlewoman, but your legs are too hairy and so are my conjuring skills. I'm desperate. We'll try it."

The advertisements located the *khanatta* in the Public Fields to the north of Clona: several hours away on foot but directly accessible though a bank of syntei in an upper tier of the nearest exchange. With some difficulty they obtained an interview with Dickensohn's immediate subordinate, an energetic and swarthy man with the improbable name of Four-way Polo.

Polo ran his hand across his bearded

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face. "We have no magician at the moment," he said thoughtfully. "Old Styrkrantz was bitten by a websnake that he'd left in his boot by mistake." He studied the pair of them shrewdly. The young man was tall, well-muscled if a trifle flabby, with a strong face, dark skin and contrasting straw-colored hair. It was a good combination. The woman was even more striking: tall, statuesque, with eyes of a profound blue and long blonde hair. A bit snooty but that added to her attraction. Her skin was dark too, though several shades lighter than the man's. Their facial structure was exotic. "You folks from Selversynd or somewhere?"

"Close," said Marco, bent on flattery. "Very perceptive of you. Small village in the same region . . . name of—er—Relativity," he added, his imagination automatically invoking matters mathematical.

"How good a magician are you?"

Marco embarked on a lengthy and involved explanation of how his equipment had unfortunately been lost when their donkey had fallen over a cliff, and that although he could build it anew, the task would require time and a modest cash advance. He ventured to hope that a verbal description would suffice as a purely temporary measure. Polo declared his willingness to listen to anything while reserving judgement as to its veracity, as was his natural privilege.

"My best act," said Marco proudly, "is sawing the lady in half." Polo appeared unimpressed, and Marco hastened to explain. "She survives the disconnection," he added. "I put my beautiful assistant, Sabi Quynt"—here Polo bowed respectfully to Elzabet—"in a long wooden box. I cut the box in half with a saw—"

"What is a saw?"

"A toothed knife for cutting wood."

"Ah. In Samdal we use a dropsynte."

Marco wondered what that might be, but now was no time to get distracted. "I cut the box and separate the halves. Yet the Sabi is—*unharmed!*"

There was a lengthy silence. "Too easy," said Four-way Polo.

"What? It took me *years*—"

"You've got a pair of *kasyntei* in the box, arsey—beg pardon, Sabi—back-to-back, with a gap. Then you saw through the gap, right?"

There was a stricken silence from Marco. He *still* didn't find it natural to *think* syntelically. Elzabet came to his rescue.

"No, we don't use syntei."

Polo perked up a little. "That's interesting, it might just spark an audience . . . Can you *prove* you don't use syntei?"

"Yes, of course," said Marco. "By opening the—no, that's stupid, they'll see how it's done." Thinking aloud, he went on: "And it'll be the same problem pulling grabbits from a hat, or scarves from Elza's nose. The confounded syntei make it all too easy, Polo's right."

"Too bad," said Polo dismissively. "I thought maybe we had something going there, for a while, especially with your assistant's exotic looks. Tall, blonde, unusual brown skin—" his voice trailed off and he gave Elzabet a frankly appraising look. And that gave Elzabet an idea, though not the one that Polo had evidently thought of. It was appallingly vulgar, but their predica-

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ment called for extreme measures, and she could think of no alternative. She'd just have to hope it never came out in Danx. If that shrew Fiola Tryce-Knightly ever got wind of it . . . Elzabet tapped Marco on the shoulder.

"Out!"

Marco's protests were in vain.

"Sab Polo and I have business to discuss. You'll only raise irrelevant objections, inhibit the discussion, and make me lose my nerve. Out!"

"But Elza, surely you're not—"

"No, I'm not *that* desperate. Yet. But it will come to that unless you do what you're told. Leave it to Sab Polo and me."

"The fools knew nothing," the Quizitor muttered in disgust. "Cut them down and feed the bodies to the Maw." Not that anyone with the intelligence of a bole-toad would imagine that they did, he thought wryly. But the Deacon's soft-spoken commands left no room for argument, and the unfortunate syntemen were the obvious targets for his wrath. The Quizitor reached for the falasynte to make a carefully worded report.

Augustine Tambiah Sadruddin relayed the unsurprising news to the Deacon, privately consoling himself with the thought that no Synteman of the Retinue could reasonably be called an innocent victim. Even so, he was unprepared for the casual brutality of the Deacon's response.

"As I had expected," said DeLameter. "But we cannot permit the Church to be weakened by laxity going unpunished, can we, Sadruddin?"

"No, Revered One," said Sadruddin, feeling sick. "We must all bow to the will of the Church and strive for Her glory."

The Deacon frowned. "Sadruddin," he said, "I shall be candid. While my love for the Church regrets that the strangers' Sins of Division be left unpunished, my reason regrets still more the loss of the knowledge they bore. They *must* be recaptured."

"You speak Truth, Revered One."

"Further, it is manifest that the offworlders—" *Ah! He agrees with my interpretation!* "—could not have made their escape without the assistance of some highly placed person. Or several. Within this house."

"I concur, Deacon. As well as guard uniform they had access to your personal seal and official documents. And their route was well planned."

"Sadruddin, you slice to the heart as a flensing-knife. You are my Right Hand. You must suspect who is responsible?"

The words tripped easily enough off Sadruddin's lips—he had long rehearsed them against this eventuality. "Revered One, I think that the Sins of Division and the escape are not unrelated."

The Deacon's smile was sardonic. "Quite. The sinner and the traitor are one. We must seek out the corruption within and excise it in purification, as well as recapturing the offworld perverts."

"To stamp out corruption within," said Sadruddin carefully, "is a demanding task but feasible. On Samdal, however, we lack jurisdiction—and, with respect, we should not antagonize the Vain Vaimoksi." *And that,* he told

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himself firmly, *is as far as you dare resist*.

"I have no intention of antagonizing the Vain Vaimoksi, Sadruddin. *Those* offworlders are as good as dead in any case. But our lack of jurisdiction on Samdal is no obstacle. Continent of perverts it may be, but we can bend that licence to our advantage. Freedom of passage will become our ally. We shall dispatch agents into Samdal to hunt down the alien vermin and return them to our grasp.

"And you, Sadruddin—I have chosen you to organize this. You have become acquainted with the offworlders and their patterns of thought—as I intended when I placed you in charge of them."

"I am deeply honored at your trust and at the opportunity to serve my faith," said Sadruddin. Seeing that the audience was at an end, he backed out of the room.

The Deacon watched him leave, and the ancient text skittered across his mind on claws of ice. *If thy right hand offend thee . . . cut it off*. He had no firm grounds to supect his Chaplain, but . . . the Deacon may trust nobody.

Marco wandered among the sideshows until he found one that offered prizes in a game of chance involving two octahedral dice and a number of wooden discs. After kibitzing for a quarter of an hour, he surreptitiously programmed the rules into his wristcomp and set it looking for a strategy. To his surprise, it claimed to find one, and Marco risked a *skint* to try it out.

When Elzabet emerged from Fourway Polo's tented office, carrying what appeared to be a large string bag held together with tiny metal clasps, she found Marco squatting outside on a small pile of coconuts.

"I see you've been busy," she said in a tone of contempt. "So have I. We are now employees of the celebrated Mahmool hep Hazaar Dickensohn."

"Doing what?" asked Marco with interest.

"I," she declared, striking a pose, "am an exotic dancer. *You*," she continued, poking him in the chest, "are an assistant to the ossivore trainer. And I might add," she stated haughtily, "that it took all my powers of persuasion to get Polo to agree even to that."

"Oh," said Marco. "I didn't realize that dancing was a suitably refined profession for a lady of culture. Though I suppose it depends on the type of dance—" He looked at the pile of coconuts, then at the string bag. Taking it from her hand, he held it by the handles and tipped the coconuts into it, one by one. The bag made a tiny tinkling noise, which struck him as odd. When he stood up, the coconuts all fell out of the bottom.

"You idiot, Marco," said Elzabet. "That's not a bag." She watched as Marco gathered the open end in his left hand, tipped the coconuts back in with his right, and rose to his feet in triumph. Without a word she set off across the field at a smart pace, so that Marco had to trot to catch up.

"Elza, if it's not a bag, what—"

"Just don't tear the hem," she snapped, leading the way to a cluster of small tents. She studied the entrance carefully as if looking for snakes, but seemed to find none, for she opened the

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flap and ducked inside. So did Marco and the coconuts.

"Did you say '*hem*'?"

"I did." Elzabet looked the tent over. A table, two large down-filled bags, and a synted bucket for waste-disposal. "Not much, but it will have to do."

"String bags," said Marco, "don't have hems."

"That's not a bag, Marco," said Elzabet. "It's my costume." Marco said nothing but his eyes opened wide. Elzabet picked up the item. It was made of wide-meshed netting, and weighed perhaps half an ounce. She shook it, and the metal objects at the intersections jingled: bells. "The *handles*, Marco dear, are shoulder-straps. And there's no bottom to it because my legs have to be able to poke out. It's a *dress*, my sweet: it is intended to contain the firm, youthful flesh of a desirable young woman.

"And not, you forsaken fool, *seven hairy coconuts!*"

"It's not seven, Elza, I won . . . forget it. A dress, is it, love? Didn't you miss off a tiny prefix?"

"Marco, that's what *exotic* dancing is all about. It's only because this locality suffers from what on Samdal passes for a streak of puritanism that I'm to wear anything at all. This costume complies with the local by-laws without interrupting the view of my unusual cinnamon hide. Samdalis really go for tall, blonde, dusky maidens."

"But Elza," protested Marco, "you can't dance!"

"I notice you don't protest at the affront to my modesty."

"I'm broad-minded. It'll do you good. But you don't have any experience!"

"So much you know." She wriggled out of her clothes and into the fishnet, and began to writhe sensuously, wiggling her hips and clapping her hands above her head in an energetic and insistent rhythm.

A giant hand grasped Marco's groin and squeezed. "Mother of Galaxies, Elza! They'll rip the joint apart in lust-crazed riot! Where did you learn *that?*"

"While you were clambering the rungs of the Magical Adder or whatever it is, I was taking evening classes in classical dance at Madame Lollengass's Academy for Ladies of Breeding."

"I see," said Marco. "If I'd known what it entailed I'd have taken up *classical dance* myself. Mind you, I *do* see where the breeding ladies come in—"

Elza ignored him and looked demurely at her toes. "I agree that the costume is a little irregular—it's usually an opaque flowing robe from neck to ankle. And I *have* speeded up the movements a little and sharpened the rhythm. But underneath it's the same basic thing."

"Oh, I agree, I agree," said Marco with a leer. "Your basic thing is just not so far underneath this time. Elza, I am genuinely amazed. I didn't realize you had such hidden talents. How much do we get?"

"My remuneration is fifteen *skint* per day plus food and this tent. You get five, plus food; and I'll let you share my tent for free."

"Only five? You mean you get *three times as much* as me for wriggling about in your pretty pelt?"

"Naturally. I'm the skilled worker. You're just the manual labor, feeding and mucking out the ossivores."

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Marco belatedly asked a question that he should have thought of earlier. "Elza? What *is* an ossivore? It sounds kind of nasty."

"Oh, no," said Elzabet. "They're just soft furry pussycats trained to do tricks." As the furrows fled Marco's brow she added, "And they weigh half a ton with three-inch fangs, and eat half a sheep a day." Marco rolled up his eyes and collapsed on one of the featherbags with a groan. "Marco! Marco! Marco! Great Mother, he's fainted." She leaned over to check his pulse, and was grabbed round the waist by a dramatically revitalized patient.

"I can play tricks too," he said. "Didn't your mother tell you never to get near a man on a bed, dressed like that?"

"Marchioness Arabella of Quynt told me to do or not to do a lot of things, depending on circumstances, none of which are your—Marco! stop it! You'll ruin my dress!"

Later nibbling contentedly at her ear, he whispered, "Those ossivores don't really eat half a sheep a day, do they?"

Elzabet said sleepily, "You're a vulgar cad to take advantage of a lady in distress."

"But sexy with it. You *were* pulling my leg?"

"I admit it, Marco. They *don't* eat half a sheep a day."

"I thought not," came the smug reply.

"They eat a whole sheep a day."

Brown girl in the ring.
Tra la-la la-la;
There's a brown girl in the ring,
Traaaa la-la-la-la-la;
Brown girl in the ring,
Tra la-la la-la;
She look like . . ."

The antique ditty, sung slightly off-key but with a compensating gusto, easily penetrated the fabric of the tent that held the ossivore cages, wafting across the Public Fields on the afternoon breeze. Elzabet, rehearsing nearby, found it distracting: partly because it upset her rhythm but mostly because she couldn't understand what Marco had to be cheerful about. And, as she had explained to him when he first started singing it the day before, she wouldn't be in the ring, but in the danceshow tent. Then she had made him swear on his bible—the *Engineering Data Digest*—not to watch when she was performing. And, like a fool, he had done so, to make her feel better.

When Marco had first poked his nose through the flaps of the 'vorehouse, and seen the ossivores in their iron cages, he hadn't found anything to be cheerful about either. Elzabet had exaggerated a little, but a 'vore was nothing to laugh at: five hundred pounds of lean, hungry flesh-eater. It looked something like a sabretoothed tiger, with large flaring da Silva antennae ears and a double row of golden needles in each jaw. It was striped lengthwise in crimson and white, with a black tufted mane that ran along its spine and then twisted to the underside of its tail. The tail, unusually long, ended in a black tuft matching the mane. Its eyes were an improbable pale blue. Two of the beasts were prowling up and down their cages, the rest were asleep. When Marco approached one of the cages, its occupant snapped alert, gave vent to a snarl like armor-plate being

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torn to shreds, and hurled itself at the bars with a crash that rattled them, and Marco's teeth, in their sockets.

He stepped back hurriedly, and a cool hand touched his arm. He whirled around. He saw a short, mousy looking girl aged about eighteen standard years, with eyes too large for her face. A coarse, shapeless garment resembling a sack concealed what Marco judged to be a rather boyish figure. Her hair was braided and coiled on top of her head, secured by a wooden pin.

"Sorry. I didn't mean to startle you. I suppose you're Marco Lontvidge Banki. Four-way said I was to train a new assistant."

"Strabyen, Sabi," said Marco, in his Shaaluin accent.

"Zdravjen. I am Lomyrla Polo Koorbun, 'vore-trainer."

"I am honored, Sabi." *Great Mother! This little mouse in a cage with those ravening beasts!* "Polo? You related to Four-way?"

"He selfborne daughter, not that you'd notice. But you may refer to me as Sabi Koorbun, Banki. What do you know of ossivores?"

"Not a thing—uh—Sabi Koorbun. But —"

"*Sniph!* That wozzet-humper Polo's given me another nozzy! I *told* him I wanted an experienced hand this time! I bet it's all that new Quynt girl's doing, she's a friend of yours, isn't she? Polo's always a sucker for a well-stacked froom!"

Marco headed for the exit.

"Hey, Banki? Where the skunt are *you* off to?"

The reply floated back over Marco's shoulder. "To offer your father my resignation."

Lomyrla studied the departing back. She saw a tall, well-muscled, brown-skinned man, good-looking in a foreign sort of way. *And his accent is intriguing: half Shaaluin, half the demons know what. I've had assistants who were harder on the eye, and on the ear . . .* She came to a decision. "Wait!"

Marco stopped by the tentflap, facing outward. Lomyrla took two steps towards him. She hesitated, then said, "I'm sorry, Banki. I'm sick to death of training nozzies—I mean, inexperienced hands—and I don't get on very well with Polo. He's not my father, by the way. And I didn't mean to insult your friend, I'm sure it's all very proper. I have a bad habit of lashing out when I'm angry."

If she's his daughter, how come—but who knows on this improbable planet? The trouble, Marco suddenly realized, was that she had come much too close to the truth for comfort. "Forget it," he said, "and let's start over. But you call me Marco, right?"

"All right . . . Marco."

"Thank you, Lomyrla. Now, tell me everything about ossivores. You'll find me a quick learner—for a nozzy."

For the next hour Marco had immersed himself in 'vorelore. They didn't eat sheep, of course; Elza had invented that. Indigenous Qish fauna would steer clear of alien sheep for sound reasons of biochemistry. But she'd caught the spirit: large quantities of fresh-killed raw meat. They were fastidious beasts and their cages had to be kept clean. They were liable to suffer from a variety of diseases, most of which were treat-

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able if caught early, and Marco became a fount of knowledge on the topics of ear worm, syntshrivel and furball blockage.

Their anatomy was . . . complex.

"Where do you think a 'vore keeps its vital organs?" Lomyrla had asked.

"Somewhere around its middle, like the rest of us, I'd imagine." Marco watched in mesmerized horror as Lomyrla reached a bare arm into the cage where a snoozing 'vore was sleeping off a hearty meal of buloceros, and thumped it smartly on what should have been its stomach.

It sounded like a bass drum. The 'vore opened one eye speculatively, but Lomyrla had withdrawn her hand.

"They're *hollow*?" squeaked Marco, aghast.

"One big bellows. A'vore is eighty-five percent lung. So where does it keep its stomach?"

"I have no idea," said Marco.

"Me neither," said Lomyrla. She pointed towards the horizon. "Somewhere out there, about ten yards underground."

Miracles are commonplace on Qish. "Don't tell me," said Marco. "Symbiosis. The 'vore has a *synte* halfway down its neck and its stomach lives a comfortable life of its own inside the mother plant. The plant derives its nourishment from the 'vore's stomach, and in return keeps it safe from attack." He looked at the massive animal. "Not that a 'vore's stomach needs that kind of protection . . . probably evolved when 'vores were harmless little beasties knee-high to a grasshopper. No reason to lose it again, though, when the proto-'vore carried on evolving—it's scarcely an *anti*survival characteristic!"

"You use many words that I don't understand," said Lomyrla. "Ossivores feed on the bones as well as the flesh of their victims. The stomach acid is so strong that it would dissolve the 'vore itself. So, by *Magog*'s grace, it keeps its stomach safely apart. You're right that the beast is well protected. However, *there are more ways to catch a 'vore than digging up the forest for its stomach.*" She handed him a pitcher of water and pointed to the nearest cage. "Throw it over her."

Gingerly Marco swung the pitcher back . . . and forward. The stream of water hit the unsuspecting 'vore in its left ear. Marco fully expected it to rip open the cage and devour him on the spot. It didn't. It uttered a feeble wail and rolled on its back with its paws in the air. Rigid.

"Great Mother! What did I do?"

"If there's one thing a 'vore can't stand, it's water. They'll drink it, but they can't stand getting wet. It paralyzes them."

As Marco started puzzling out what quirk of evolutionary advantage had produced that particular effect—he could imagine several plausible theories, doubtless all wrong—the 'vore staggered to its feet, shaking its head and whining. "Temporarily," Lomyrla added. "Though a bath knocks them cold for hours. That's how we train them. Only we use waterjets synted from the central tower, not jugs. Wouldn't be able to handle a vicious beast like a 'vore, otherwise. But they're very intelligent, and they soon learn.

"Now, I'll just change into my per-

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formance clothes and then I'll run through the routine with you." She disappeared into a screened-off area. Marco squatted in wait. After a time, Lomyrla reappeared.

On her feet were tiny red sandals. Her hair, unbraided, fell to her bare shoulders in a soft nut-brown cascade. She wore a low-cut dress of emerald green, gathered beneath her breasts and hanging to her ankles. The neckline plunged giddily, hung together by cross-lacing from neck to navel. Both sides of the dress were slit from armpit to hem, similarly laced at mid-hip. Undergarments were conspicuous by their absence, and Marco could imagine no place where any might be concealed, unless of highly ingenious design. *Mousy? Boyish? Mother of Galaxies. Marco Leontevich, you really put your elbow up your nostril. And just look at those doe-eyes, big enough to drown in . . .* A great wave of emotion swept over him, which he told himself must be his paternal instincts. Such a sweet, fresh-faced young beauty needed a father's care . . . and though she was Four-way's daughter she clearly refused to acknowledge him as a father, yes, of course, that was it . . .

His responsibility was clear. Marco must assume the role of protector.

And it was soon after making that decision that he had broken into song.

The Grand Khanatta broke camp and moved from Clona to Cambredyn, then on to Ventapux on the shores of Glovish Gulf, westward from Promensel into Treece. While the heavy carts, and other large equipment, could be taken apart to pass through a wyzand, this was a laborious process reserved for occasions when it was unavoidable. As they struck camp for the fourth time in as many weeks, Marco wondered why they bothered to move around at all. He sought out Lomyrla—an increasingly frequent habit.

"Lomyrla? Why don't we just stay put and let the customers come to us? By synte?"

Lomyrla giggled.

"What's so funny? It seems perfectly sensible to me!"

"There speaks a true nozzy. And it *is* perfectly sensible—to a nozzy. But any red-blooded *Khantü* would go stir-crazy, stuck in the same hole all the time. When the yearning comes upon us—as it does—we move on. *Nomads sprung we from* Magog, *nomads must we remain.*"

It later occurred to Marco that mass transport by syntei raised some very awkward problems in logistics, after which he couldn't decide whether Lomyrla had told the truth or invented the whole thing.

Elzabet had polished her dance routine and made her début under the professional pseudonym of *Gold Lightning*. By the third day there were lengthy queues outside the danceshow tent and her pay had been raised by another five *skint* per day. Soon Marco felt as if every man on Qish had been to ogle at her—except him. He was surprised to find that he didn't regret his promise. He could always have sneaked a look—but he knew he would gain no pleasure from watching something that she must find humiliating. She had become absent-minded and short-tempered, and they now slept on separate

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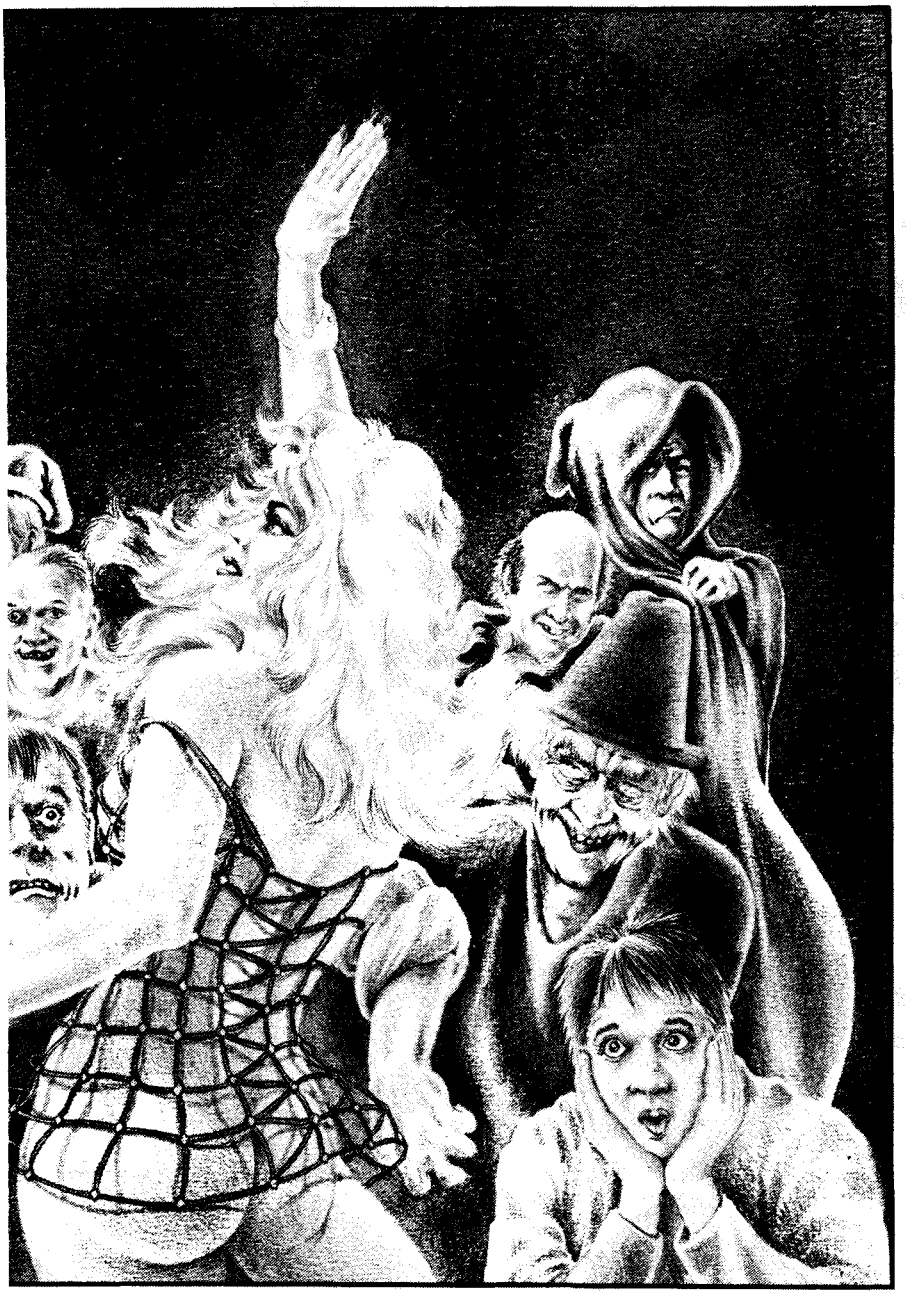

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featherbags. Marco tried to make allowances. After all, it was no life for a high-born young woman of gentility. To her credit, she was sticking with it to earn them the money they needed . . . a brave sacrifice for them all. He tried not to intrude, and spent more time with Lomyrla.

He was fast becoming a 'vorelore expert, down to the minutiae of alimentary disorders, ticks, and the correct angle for scratching-posts. Lomyrla was impressed, not knowing that Marco was storing most of the information in his wristcomp. Not that it would have made any difference, wristcomps being akin to magic on Qish. He had even managed to enter a tenanted 'vore cage and still feel comfortable about it—though he kept a firm grip on his waterjet. This device was made from a type of synte that the syncurists who bred it called a *mismatch*: the orifice of one kasynte was the size of a thumbnail, whereas on the other it was ten times as big. The big one was placed in the central water-tower; the small one had a simple valved device that could turn the flow on and off. The combination of the drop in height and the decrease in nozzle-size produced a high-pressure spray that could freeze a 'vore in seconds.

Lomyrla watched his progress with approval, and started to think up ways to include Marco in the act. He would be a wonderful draw for the matrons of Samdal—especially in a brief loincloth.

Gus Sadruddin bent his mind to the delicate and complex task of appearing to leave no stone unturned in seeking out the escaped offworlders, while trying his best to ensure that their whereabouts remained undiscovered—at least by the Deacon. He recruited numerous agents, carefully selected for apparent ability but subtly flawed, and dispatched them to various parts of Samdal. At the same time he formed a small, covert group of his own highly competent agents, in the hope of discovering where Elzabet and Marco were, the more effectively to misdirect the search. His biggest worry was that the Deacon's own agents would find them first. Another was a growing anxiety as to how long he could keep the whole charade running before the Deacon became annoyed by its lack of success. Or, worse, suspicious. If he wasn't already.

His task was made more difficult by the striking physical appearance of the offworlders, unmatched anywhere on Qish. His friends would not be aware that they were being hunted down, but they would surely have the wisdom to be prudent. Gus hoped fervently that they had managed to find themselves a nice, quiet hideaway.

If he had know what Elzabet was doing, he would have gone into hysterics.

The room was dim-lit and dirty, and a pall of smoke hung near the ceiling, having made its way from the kitchens. Hunched at a corner table, their faces half hidden behind enormous mugs filled with dark Larbin ale, were two men. Their disreputable appearance matched that of the inn, and their eyes were constantly on the move, darting this way and that as they talked in low murmurs.

"You're certain?" The speaker was

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a greasy-maned rogue, one Snalikka by name.

"Dead sure, Snal. They don't build crumpies like that anywhere on the continent, and that hide of hers isn't that color because it's been tanned. And that hair clinches it. Gold Lightning—I'll say! She can flash at me any time she—"

"Save it, Magborp. What about the *hoom?*"

"Tracked him down in the 'vore-house, making eyes at a mousy bit of local crumpy half his age. He must be blind as a wozzet with its snout in the privy, when he's got that corn-haired dolly—"

"I said, *save it!*"

"All right, Snal, all right. Keep your eyes on." Magborp downed the dregs of his mug, and signaled to the ale-maid to bring another. He belched: Snalikka eyed him balefully. "So now all we have to do is send word to Two Mountains, and pick up a cool thousand *skint*."

"Maybe."

"*Maybe?*"

"If blondie is as good a bit of crumpy as you say—and to judge by the way you salivate every time you mention her, she must be—we ought to be able to get more than half a skadd apiece for her."

Magborp's mug stopped tilting, and some of its contents slurped down his front. He didn't notice. He said, "You don't mean—"

"That's just it, Mag. I *do* mean. The Vain Vaimoksi."

Magborp's grubby face paled. "I don't like dealing with the VV, Snal. A man can disappear when those people are around."

"Yeah. If he's a fool and a coward. I reckon the VV would pay at least two and a half skadd for her. 'Course, they'd sell her at a profit, but we don't have their connections."

Magborp looked worried. "But—what about the *hoom?*"

"Kill him."

"Unh? But he should be worth a—"

"We need to keep it simple if we're bucking Two Mountains and bringing in the VV. If the *hoom* gets awkward, it could foul everything up a dozen ways. He wouldn't fetch more than a splitskadd anyway, it's not worth the candle."

Sweat broke out on Magborp's brow. "Buck Two Mountains? Are you crazy?"

Snalikka grinned. "Who's to know?"

"I don't like it, Snal. I don't like it at all."

That's a shame, thought Snalikka. *If Magborp's scared, he might just decide to cut his losses and sneak off to tell Two Mountains on his own.* But his voice was casual as he rose, saying "Think it over, tell me tomorrow." As Magborp lumbered toward the door, Snalikka added a mental reservation. *If you live that long. A man has to be careful in this business. And two and a half thousand skint sounds better split one way.* He dropped his hand to the hilt of his dagger and moved to follow Magborp. *I can take Maggie when he gets to the canal crossing. That leaves the big brown hoom. Then I'll have the crumpy and the skint all to myself. Ought to be able to have a bit of fun, too, before she goes to the Vain Vaimoksi.*

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A small, tubby dwarf was being pursued by a second dwarf, riding on the back of a large dog and brandishing an enormous club. The rider had only one leg: the other was tucked under the fugitive's arm. The dog put on a burst of speed, the club descended and the fugitive's head vanished between his shoulders. As the rider dismounted the head popped back up again. The club swiped sideways and the head fell off. The torso danced up and down while the head stuck out is tongue and made a vulgar noise. Infuriated, the second dwarf hit the torso over the shoulders, whereupon the arms fell off. On the next hit, the trunk fell to the ground, leaving only a pair of legs standing.

"Psssttt!" hissed the head in a stage-whisper. The second dwarf bent closer to hear, and one disembodied leg kicked him in the seat of the pants.

The audience roared with laughter. Snalikka, sitting about halfway back among the cheaper seats, roared with them. The khanatta had maintained an old circus tradition: the clowns. With syntelic variations, naturally.

One of the severed arms reached out, tripping up the second clown. The first clown reassembled himself, dragged the other over to the dog, and swapped their heads. The dog-head barked, while the first clown stepped back and nodded sagely, as if satisfied with the improvement. He was knocked flat by a pink and yellow pantomime horse that galloped past with four naked human legs—*one* female.

Marco, waiting in the wings, was impressed by the high degree of coordination involved. No wonder even an audience born and bred on a syntelic world thought it worth watching. It took a lot of experience to judge the difficulty of a syntelic act. The trapeze artistes, plunging groundward into syntei concealed by paper hoops, looked spectacular, but much of that was showmanship. The troupe of performing centaurs — torsos of men and women on horses' bodies—looked run-of-the-mill until you thought about how the horses could see where they were going. As the clowns started chasing each other with paper-hooped syntei whose kasyntei counterparts led directly to an enormous water trough, Marco picked up his own hoops in readiness for the 'vore act.

As Lomyrla and Marco put the 'vores through their paces, Snalikka began to take a serious interest, concentrating on the waterjets that they both kept close to hand. *An excellent way to get rid of the hoom.* When the act finished he slipped out of the tent and headed for the danceshow. *Now—time to confirm at first hand the quality of the crumpy.* On the way he took a hard look at the watertower, and nodded thoughtfully.

The Grand Khanatta moved northward from Glovish Gulf, across the undulating Treece countryside, with its groves of fruiting plants and its herds of rhomneys—dumpy products of Concordat gene-splicing, resembling pink sheep with cowlike udders, kept for their milk and wool—and peaceful farm-buildings in slate and wattle. Eventually, in the distance, veiled in cloud, there appeared the topmost peaks of the White Ramparts, a massive range of mountains whose southern face plunged dizzily in sheer granite cliffs. To the

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west, the Andillera range drove northward like a white-capped tidal wave, to break in frozen foam against the Rampart's walls.

Marco and Elzabet now slept at opposite ends of her tent, and scarcely spoke to each other.

Stripey the 'vore was sleeping soundly when something nudged its back, and it rolled over. The pressure increased and it hauled itself to its feet. The world was shrinking. Wide awake now, it turned its head. One of the roustabouts had inserted a large kasynte through the cage bars, linking it to the performance cage in the main ring. Another hauled on ropes that moved one wall of the cage, driving the beast toward the opening. The 'vore grunted and loped through the aperture.

The audience hushed as the great beasts appeared, until finally there were five of them, perched upon large tubs.

Lomyrla and Marco gave their waterjets a final test and made their entrance. Lomyrla led the 'vores round the cage in line astern, spinal manes fluffed proudly, tails aloft in sinuous loops. She lifted her hand, and together they rose on their haunches. The largest 'vore patted a brightly colored ball across the cage.

Snalikka entered unnoticed through a side-flap and located himself strategically beside a tent-pole. He had remembered the music from the previous performance and knew the stage that the act had reached. Picking his moment, he raised a short tube to his lips.

Marco picked up a pair of paper-covered kasynte hoops. One for him, one to hand to Lomyrla. They were about to jump the 'vores through the hoops.

Snalikka levelled the syntube at the nearest 'vore and bit down hard. A synted projectile, sped on its way by a hundred-yard drop, shot from the tube and hit the 'vore on its sensitive nose. The beast roared in pain and lashed out at the nearest object—a small tub a yard from Lomyrla's feet. The tub crumpled. The 'vore, emitting a menacing high-pitched whine, advanced upon her. She raised the waterjet and pressed the release.

Nothing happened.

Snalikka laughed mirthlessly. As soon as the music had announced their appearance in the ring, he had blocked the syntei in the water-tower.

The five 'vores sensed the heightening tension and began to move toward Marco and Lomyrla, surrounding them. Lomyrla shrieked but the creatures moved closer. Marco looked frantically around, still holding the hoops.

He saw the clowns' water-trough. Holding a hoop like a frisbee he hurled it over the bars, to land with a splash in the water.

The 'vore leaped, but as it did so, Marco dived across the cage and interposed the second hoop. The 'vore crashed into the paper, met the synte interface at an angle, and shot into the air above the trough. It must have seen the water below it, because it set up a terrible wailing during the split second that it took to reach the apex of its flight. It hit the water in a cloud of spray and floated on its side, rigid as a log.

The second 'vore fared similarly. This left a gap and Marco backed through it, pulling Lomyrla with him.

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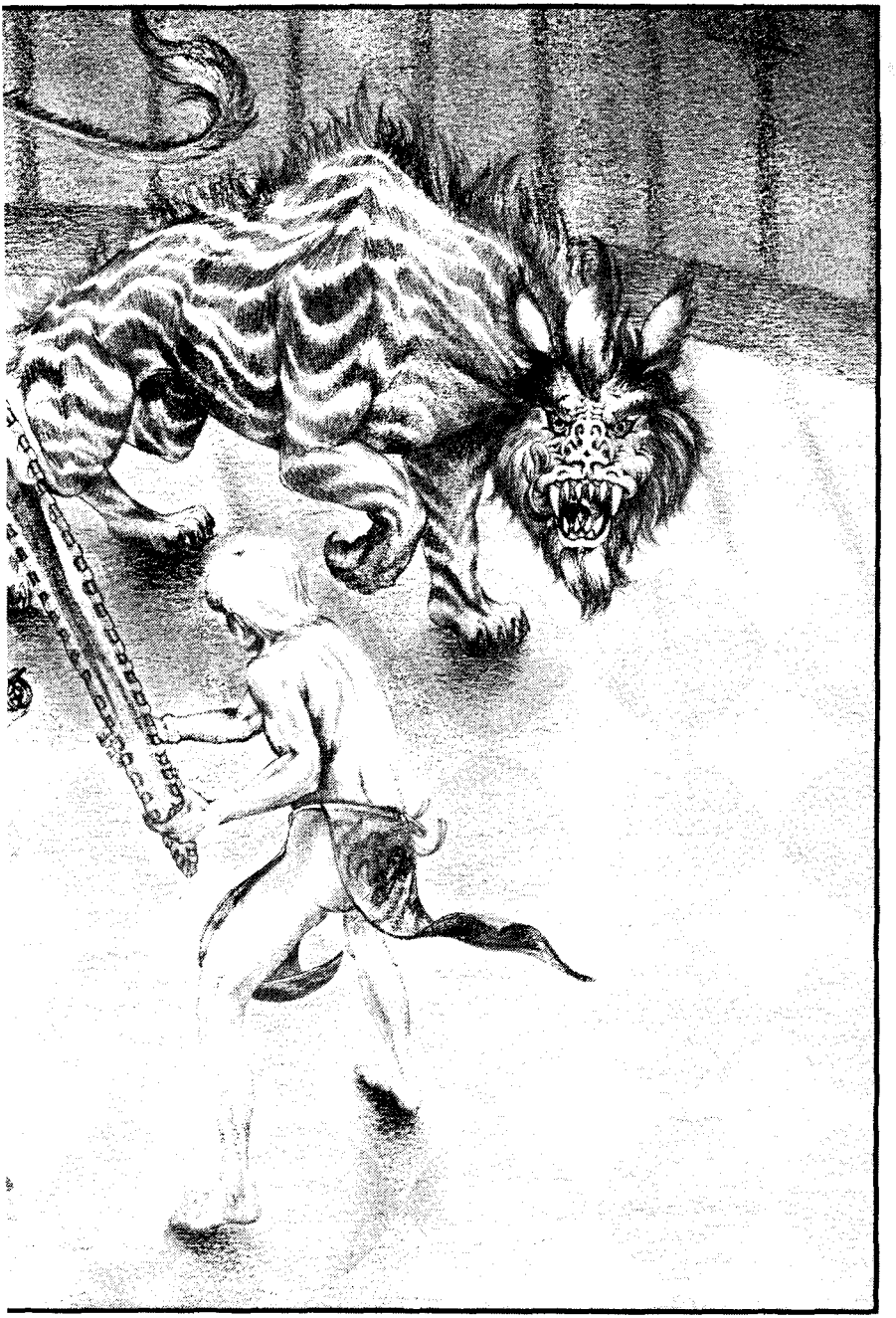

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A third 'vore thought about making a spring, saw the hoop, changed its mind, and slunk back whining on to its tub. Marco and Lomyrla made a rapid exit from the cage.

Snalikka cursed under his breath, stopping abruptly as a powerful hand clamped round his wrist, twisting his arm painfully behind him. A second hand delved into his grubby tunic, finding the syntube.

"Make a sound and I'll break your neck," said Four-way Polo.

Lomyrla grabbed Marco in a bear-hug, almost knocking him flat. Two prop-handlers led them from the ring. They were too shaken to acknowledge the thunderous applause of a relieved—or guiltily disappointed—audience.

Four-way Polo hurried in. "Bianchi—I mean, Marco Leontevich Bianchi—that was brilliant. Saved my little girl!" He shot his daughter a look. "Lomy, I know we don't see eye to eye these days, but I'm still fond of you, even though I . . . oh, what the skunt, you know what I mean." He turned to Marco. "You're a hero, Sab. Swatting two 'vores in mid-leap and cowing three more—never seen the like in my life, talk about fast thinking." Marco tried not to look embarrassed. "Not that I'm criticizing, mind you," Polo continued, "but . . . why didn't you just pull the second hoop over both your heads, and get out straight away?"

Marco, to whom that possibility had not occurred, looked at him blankly for a second. "Uh—I was worried that the 'vores might escape if I left the kasynte in the cage." *One thing you* can't *do with a synte is bring it through itself with you.*

"Good point," Polo grudgingly agreed.

"Oh, stop carping, Polo!" Lomyrla grabbed Marco's arm. "That *skurd* Polo's never satisfied. Come with me, let's get away from here."

Polo watched them go with a wry look on his face. Then he headed back to where he had left Snalikka under guard.

Marco was confused.

He had ended up in Lomyrla's tent, where she had flung herself upon him, mouthing endearments, weeping, and laughing all at the same time. He had reached out to give what he had intended to be a reassuring fatherly pat, but her slit skirt was in disarray and his hand encountered not cloth, but warm flesh. Inspired to investigate further, and hardly discouraged by her moist breath in his ear and gentle moans of pleasure, he had discovered that it was possible to unlace the sides of her dress using only one hand at a time. This incidentally resolved the vexed question of undergarments . . . by which time he had decided that his feelings were not entirely paternal after all.

But when their lovemaking was over and she had gone, he wasn't sure what he felt. His responsibility was to Elzabet. And deep down . . . If only she hadn't been in such a disagreeable mood lately! He thought of Lomyrla's hands stroking his body, and postponed the problem for later consideration. Indefinitely.

Polo had learned little of value from Snalikka, beyond the plan to kill Marco and sell Gold Lightning to the VV. The involvement of Two Mountains had not come to light. While his two most

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trusted men disposed of the corpse, Polo took a second look at Snalikka's possessions. Clothing, boots, a belt with a brass buckle of obscene design, a money-pouch containing seventy *skint*, flint and striker, several rings. Polo pocketed the skint and the rings, pushing the other junk into a pile. He motioned to to a third man.

"Dump them. And then send the two nozzies to me."

Marco and Elzabet must be told of their danger.

Gold Lightning was too valuable a property to lose.

The Grand Khanatta played to packed stands on Pontrephakk; to a thin audience of village louts in Halfpaw; to the disdainful citizens of Tantra Pi, whose only true passion was the salt-trade; and to the credulous inhabitants of Buxsil Parv, who applauded wildly at unpredictable moments, as the mood took them.

Elzabet and Marco continued to perform, but they and Polo's henchmen kept a wary eye on the crowds and there was always a guard on the watertower.

Deacon Delameter's agents, the meanwhile, scoured the continents of Samdal and Lamynt with grim persistence, traveling by foot and by horse, by synte, ski, and dog-shay, seeking two golden-haired persons of above average height with bodies brown as dried vunbugula. But they sought the fugitives in quiet corners and out-of-the-way hiding places, never dreaming that they would exhibit themselves so prominently. The agents asked discreet but insistent questions at every likely inn and tavern, in every bolt-hole or wayward locality. Nobody connected the descriptions with a magnificent blonde who danced naked in the khanatta, or a tall, muscular daredevil who publicly flirted with death by 'voretooth. And neither Deacon's nor Chaplain's agent had the (mixed) fortune of Magborp, who had wandered with salacious intent into the danceshow tent, to recognize the object of his searches undulating before his goggling eyes.

But it could only be a matter of time . . .

Two months after leaving Ventapux the procession of wagons forded the Lorn River South, where the city of Sinda nestled in the foothills of the White Ramparts like a bole-toad snugged against the roots of a portle-tree.

They topped a ridge of low hills beyond the river.

Against a backdrop of towering rock, a large lake spread across the valley floor. It was obscured by mist, but resembled a patchwork quilt, dappled with every color of the rainbow. From each patch a powerful jet of water shot skyward. At its lofty apex each jet shattered into a swirling mass of windswept spray, merging with its neighbors to form a layer of cloud from which an incessant fine rain fell, veiling the distant lake.

The patches, Marco decided, were flowering plants. But where did the fountains come from? Lomyrla, cradled in his arm, explained. Elzabet was standing sullenly nearby, unable to admit even to herself that she was jealous.

"It is the most widely famed sight on Samdal," said Lomyrla. "The Spouting Mere. On the upper reaches of the Lorn river, atop White Ramparts, there grow

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great synteric waterplants in brilliant colors. Their seedbuds are carried by the river though a vast underground cavern that plunges into the living rock, emerging at Rampart base and flowing into the valley before us. Here, where the water is shallow and placid, the buds put out tendrils and take root. At first, the parent kasyntei have their mouths above the level of the river, but later the water rises, and descends through the syntei with great force to form the cascades. Meantime the budded fruit has grown sideshoots of its own, whence the particolored patches.

"Each Snowseason the plants die back, to rebirth the following Melting."

"Do the plants eat fish?" asked Marco.

"So it is said. The syntmouths are fringed with thin tendrils that trap and digest the smaller water-creatures. How did you know?'

"There had to be some evolutionary advantage."

Lomyrla wrinkled her nose. She adored Marco, but at times he said the most incomprehensible things.

The next leg of the journey, to Sensifoy perched on Rampart's Edge, was the worst yet. The narrow track zigzagged up the precipitous face. The larger wagons had to be broken down and carried on smaller horse-drawn carts. The 'vore cages were dismantled, and their occupants rendered senseless with frequent sprayings. The road was heavy with traffic in both directions. Marco had realized long ago that elevation is the main obstacle to travel by synte—and was so pleased with the discovery that he made sure nobody else forgot it. Here the change in elevation was concentrated. At every level sidebranches led to banks of syntei connecting to outlets across the continent with the same gravitational potential. Travelers would come from thousands of miles to make a brief level-changing transit and depart to destinations equally far afield.

"Is there no better route?" Marco grumbled aloud.

"It is the only known way up the White Ramparts for hundreds of miles," Lomyrla told him. "The rock is so hard that the track cannot be made wider."

"Oh for some dynamite! You know, if someone could solve the gravity problem it would *revolutionize* syntelic transport." Elzabet, observing them silently, pursed her lips in thought, then shook her head.

On the fourth day in Sensifoy, when the wagons had been rebuilt and a restday declared, Marco and Lomyrla lay side by side in her tent. She snuggled closer.

"Marco, darling?"

"Yes, Lomy?" he replied, not really listening, just enjoying the tones of her voice.

"I've got a surprise."

"That's nice," said Marco.

"It's . . . a present."

"For me, sweeting?"

"It belongs to both of us," said Lomyrla mysteriously. She took his hand and laid it on her stomach. "Do you feel anything?"

Marco had an awful precognition of the direction the conversation was heading, and he tried manfully to redirect it. "It's very familiar . . . let me think . . . perhaps if I explore the surroundings, maybe down *here*."

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"Behave yourself, Marco! And stop changing the subject. Guess."

The precognition became a howling certainty, but still Marco ploughed grimly sideways. "You're taking up belly-dancing to improve the musculature?"

"Oh! You wozzet! Don't tell me you haven't already guessed that we're pregnant?"

"That," gulped Marco, "is wonderful news. Uh—*we?*"

She tweaked his nose. "I mean, I am, right now, but you must bear some of the responsibility."

"I thought we were taking countermeasures. Those syntelic gadgets. The ones you say tickle."

"We are. But it all happened too quickly, the first time." She saw his face and chuckled throatily. "Don't look so horrified, dearest. It's meant to be *good* news!"

"Of course it is," said Marco. "It's just a bit of a sho— I mean, a surprise. It takes a little getting used to."

"We'll tell Four-way this evening," said Lomyrla. "He can make the arrangements."

"Polo?" said Marco in a strangled voice, not daring to enquire what form the "arrangements" might take. "But you never have a civil word to say to him!"

"Marco, this is tradition. It must be done the proper way, even if my paternal supporter is a bug-snouted wozzet-humping *skurd*."

"It's a matter of family respect."

To Marco's astonishment that craggy individual was delighted, pumping his hand like a behind-quota rhomney-maid. "I'll call on the doctor tomorrow," he said, "to arrange the synting."

"Pardon?" said Marco.

Four-way eyed him sternly. "I presume I don't have to explain the elementary facts of childbearing?"

"Mother of Galaxies, no," said Marco fervently.

"Then I hope I'm correct," Polo said stiffly, "in assuming that you intend to stand by my little girl? Keep the customs like a gentleman?"

"Of course," said Marco. He wasn't sure whether he meant it, but now was not the time to raise awkward questions.

"Next week would be a good time for the ceremony, don't you think? Keep it small, a family thing. Can't stand ostentation. I think the best day would be—"

"Next week? You want us to get married *next week?*" The Rescue Beacon, Starhome, Sam and the others—for Marco Bianchi they would all have to wait. His face became a picture of misery.

Polo pulled his body together haughtily. "Married? What are you mumbling about, man? Lomy, you don't want to *marry* this fellow, do you?"

"Demons no, Polo. I haven't even considered asking him. He's far too young and has no income to speak of. Though I *am* truly fond of him, and in time, if he can better himself—"

"Quite," interrupted Polo. Taking Lomyrla by the arm, he turned and left.

Marco sat heavily on a wickerwork laundry-basket, and breathed a sigh of relief. Not marriage after all.

Then a thought struck him.

If synting isn't marriage, what in the name of the Deceitful Maidens is *it?*

Elzabet was not amused.

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"You fool, Marco! Now you've messed up *everything!* How can we get to the Rescue Beacon if you've got yourself snared by that stupid little cow?"

"She's not stupid, Elza, she's courageous and—"

"Here am I doing all sorts of demeaning things to earn us enough travel money, and all you can do is fool around with a cheap circus tart while my back is turned!"

"That's unfair and untrue," said Marco, with shaky dignity. *And if you hadn't made a habit of turning your back, the problem might never have arisen.*

"We'll just have to skip out the first chance we get!"

"No, Elza. I can't do that."

"You don't imagine I can get to the Beacon on my own, do you?"

"I won't abandon Lomyrla. She needs me. A lot more than you do, to judge by your behavior recently. I have a responsibility . . . it's *my* child you're asking me to leave! The father must bear his share of the burden."

"*My* behavior? Oh, Mother of Galaxies! And while you're busy bearing your burden, what happens to Samuel and the others?"

Marco had no answer to that, and Elza fled from the tent in tears.

Only a matter of time . . .

Two days after Marco had been told the glad tidings a Shaaluin agent, bent on an evening's recreation, came upon the Grand Khanatta, newly arrived in Trupine. Seeking stimulation, he chanced to enter the danceshow tent. . . .

Her act over, Elzabet was lying morosely on her featherbag, bemoaning Marco's incipient fatherhood and her own degrading predicament. The flap of her tent opened and a small object was tossed in. Leaping to her feet she rushed to the exit, but the intruder had vanished. With beating heart, she gingerly picked the object up. It was a falasynte, and it spoke. She almost dropped it.

"Els'bett?"

She recognized Sadruddin's languid tones.

"Gus!"

"You are alone?"

"Yes."

"That is good. We may talk frankly, but quietly and not for long. There is danger of eavesdroppers. He who placed the falasynte will keep watch."

"Gus, what a relief to hear from you! What's happening?"

"Sabi, it is the greatest of good fortune that my . . . informant has found you ahead of the agents of DeLameter. The Deacon seeks you out the length and breadth of Samdal and Lamynt. You must take immediate steps to evade his clutches."

Elzabet explained their predicament. "We had no money, and a limited choice of employment."

"The choice was unsound. Especially your own, Els'bett. Though I would give much to see it."

Men—all the same. But it was good to hear his voice again, and she began to get a more balanced perspective. "Gus, if we ever meet again in suitable surroundings, I'll give you a private performance. But we imagined we were safe from the Deacon. And it was a calculated risk—a public place wouldn't

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appear so likely to him. It's paid off so far, we've had no trouble."

"None?"

"Well . . . there was a nasty incident with an ossivore. Some slavetaker wanted to kidnap me and sell me to the Vain Vaimoksi. He tried to kill Marco."

"Describe him."

"His name was Snalikka—" she heard a muffled curse from Sadruddin. "You know him?"

"Snalikka was one of the men I hired as an agent for the Deacon. Yes, *I.* DeLameter commanded me to direct the search. He must have acted without the Deacon's knowledge—I am sure I would know by DeLameter's actions, had he been told. That was fortunate. But there remains great danger. You must leave the khanatta at once—"

"I'm not sure we can. Marco's about to become a father."

"Er—?"

"Not me, no. A circus girl."

"In Samdal, such a prospect is doubly difficult."

Elzabet asked why. Sadruddin explained Samdali custom. "What? Oh, no, Gus, surely not! That's revolting!"

"Your thoughts are colored by habit. It is entirely natural—in Samdal. In Shaaluy it would carry the death penalty."

"Oh, Mother. So to speak. Pardon me. That complicates everything. The synting is fixed for tomorrow."

"You realize that once it is done, he must stay with her?"

"Certainly. That goes without saying." *It'll be interesting to see Marco's face when they tell him. He's really done it this time.* Elzabet had snapped out of her depression now that Gus had found them again, and now she recognized feelings of guilt. *It's my fault too—I was thinking too much of myself. He was trying to do his best and all I could do was snap at him. Elzabet of Quynt: it is time you made your peace with Marco Bianchi. You need each other.*

"This calls for a revised strategy," said Sadruddin. "We must devise a plan to put the Deacon off the scent. Permanently." He paused. "I think I may have the glimmerings of an idea. We can borrow from that gutterlout Snalikka . . . but it requires careful preparation. And some assistance. Is Polo trustworthy?

"He's very attached to his daughter, though they fight like Kilkenny cats. If Marco will play ball, Polo will."

"Good. Hide the falasynte and keep wait until I return. Strabyen, Els'bett."

"Strabyen, Gus."

Half a week passed. Then Augustine Tambiah Sadruddin put in an urgent request for an audience with the Deacon and was ushered at once into his presence. He bowed low.

"Revered One? I have found them."

DeLameter looked up sharply. "Where? Are they captive?"

"I have set their capture in motion, Revered One. They are in a khanatta in Trupine, on the White Ramparts of central Samdal."

"A *khanatta?* A curious choice. In the tent of freaks, perhaps?" *If DeLameter is starting to make jokes, the situation is* really *getting out of hand.* "But no, it is only their minds that are crippled."

"I believe they assumed that audacity

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would serve them best, Reverence. For a time, they were right. But that could not continue forever." Sadruddin produced two kolosyntei for long-viewing. "You may wish to witness their capture. Your agents carry the counterparts."

The Deacon took the proffered rings of woody tissue. "And when will this capture take place, Chaplain Sadruddin?"

"It depends on the timing of the offworlders' actions, Reverence." Sadruddin consulted a syndial. "I expect it between one and two hours from now." He made to leave.

He had taken but a step when the Deacon's quiet voice said "Sadruddin." He stopped. An anxious moment passed. "You may stay to watch the vermin trapped."

You will stay, he means. It suits my purpose. "I am honored, Revered One."

"Nonsense! An hour at least, you say? Perhaps a glass of vanduul liqueur and a game of *shinsa* to pass the time?" He beckoned to a servant while the Chaplain set up the *shinsa* board. Sadruddin and DeLameter waged desultory war on a field of hexagons, but their eyes kept moving to the kolosyntei, propped on a stand at a nearby table. DeLameter called for more vanduul and moved two of his precentors in a pincer attack. Sadruddin prudently ignored a subtle doom in three, to which the Deacon had unwittingly opened his forces, and interposed an archflamen. The Deacon advanced a minorite to fork Sadruddin's two consecrators. "Doom, Sadruddin!"

"An excellent game, Revered One. Your command of the apses was impeccable." The Chaplain looked again at his syndial. "Your agents will be making ready. With your approval, we should attend the kolosynte?"

Through the right-hand aperture they saw jostling crowds, then the entrance to a tent. The picture jumped erratically. Briefly they saw a platform on which a woman, clad only in a trellis of blue ribbon, gyrated athletically. DeLameter's brows furrowed and he peered closer. "See how the perverts disport themselves, Saddruddin, even short of Division!"

The Chaplain said, "The Quynt woman should appear momentarily, Revered One." But now the Deacon was drawn to the second kolosynte. His breath hissed, his fists clenched in spasms. "Sin and Corruption! Division and Damnation! Perversion and Wickedness! See the Ungodly profane themselves!"

Sadruddin turned his eyes to view whatever outrageous spectacle the Deacon had seen.

It was the clowns.

They continued to watch. A second woman took over on the dance platform. The centaurs came on, to another spate of denunciation from DeLameter, who was beginning to shake in a kind of palsy, with flecks of foam at the corners of his mouth. The 'vores appeared, followed by Lomyrla—and Marco.

"It is he!"

"Indeed, Reverence. And see, his female appears in the right-hand kolosynte."

"The naked hussy in her true colors," said DeLameter. His entire body was trembling now.

Sadruddin said "Your agents will seize them as they leave after the com-

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pletion of their acts, Reverence. They will abduct them by synte and—wait!" His features contorted in horror. "What is this? This is not the plan!"

A young woman, her head shaved in a tonsure, with crimson trousers and tunic and holding a yard-wide wyzand, leaped on to the dance platform. At the same time a pair of similarly attired women scuttled across the ring toward Marco and Lomyrla as they made to enter the 'vore cage. Elzabet screamed and tried to run. Marco moved a step forward to protect Lomyrla.

"The Vain Vaimoksi!" screeched DeLameter. "They must not have them! The offworlders are mine! *Mine!*"

Three men, the Deacon's agents, jumped on to the dance platform, and one leveled a syntube at the Vaimoksha slavetaker. But before he could trigger the projectile, the woman seized Elzabet's wrists and brought the wyzand down smartly over both their heads, and they vanished. Marco's assailants flung another over his head and themselves and vanished through a third. Immediately the three abandoned wyzantei withered and turned black.

"Destroyed at the far end!" shrieked the Deacon. "To follow is impossible! Oh, bones will be crushed for this!" He shuddered, then sank back in his seat with his eyes glazed, his energy spent.

Sadruddin prostrated himself full-length. "Revered One, I have failed you. I shall resign my post and return to the village of my birth, to mortify my flesh and meditate upon my errors—"

DeLameter looked at him coldly. "That will not be necessary, Sadruddin. No man is answerable for acts of the Vain Vaimoksi. You are blameless. But I must be alone now, to pray for guidance and light in this time of tribulation."

Sadruddin departed unobtrusively.

As he turned a corner, he heard the sound of smashing crystal coming from the Deacon's office, but found no amusement in it. What DeLameter had done to a vanduul flagon, he might also do to his Chaplain, should he ever suspect duplicity.

Marco was fretting at the enforced confinement. His quarters were a small wagon, covered with thick fabric against the weather, equipped with a koriel and no other exit. A pale redheaded woman, of medium height, in a purple tunic and long skirt, appeared in the koriel's mouth.

Marco failed to understand why a society that freely permitted, indeed encouraged, the sexual body-dividing uses of syntei; that expected its dancing girls to perform naked; that accepted casual sexual contact short of pregnancy without demur—should balk at permitting the prospective father to appear in public during daylight hours. On grounds of indecency. And now the time approached for Lormyrla's synting—whatever that was, for they still hadn't told him.

"Hello, Marco."

"Elza!"

"Brilliant. You'd do credit to Shirley Combs."

"But—it can't be! Your skin and hair are all different!"

"Make-up and dye. Not hard to find around here, Marco."

"And you've lost a foot in height!

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How in the name of the Deceitful Maidens—''

Elzabet slowly raised the hem of her skirt, to display a not unexpected brown leg. Around ankle, shin, and upper thigh were what appeared to be black garters.

''Gone into mourning for those who have passed beyond, Elza?''

''You *are* fond of ancient quotations, aren't you? No, these are height-reducing syntei pairs, each with a gap that holds a couple of inches or so of leg. Body-division with a vengeance. I've got another around my waist, and a couple on each arm to keep them in proportion, otherwise I'd look like a chimpanzee.''

''Orangutan. You're not chimp color.''

''Makes me look a bit stocky,'' she said, ingoring him. ''But—*ni porbleem*, eh?''

Marco nodded in admiration. ''And all of it part of the Augustine Tambiah Sadruddin masterplan for fugitive aliens. Why didn't you tell me?''

''Need-to-know. We Danx aristocrats take security seriously. It's a natural consequence of there being so many diplomats in the family. First a little charade to convince the Deacon that the VV have got us too, then we lie low.''

''You could have got me fitted out with a shrink-set too! I've just been stuck here!''

''It's not so easy, I'm afraid—but that can wait. Our biggest problem, as usual, is money. We still need it, and Gus can't supply enough. The Deacon isn't a generous employer.''

''I'm sorry, Elza. I hadn't realized that the father's family was expected to cover all medical expenses.''

''It does make life difficult. Particularly since you don't have a family.''

''Not yet.''

''So I'm assuming that obligation. I've got to earn enough to keep us both, and Lomyrla, for the next six months or so.''

Marco was bewildered by the turn of events. ''Doing what, Elza? You can't dance any more.''

''No, and I'm not sorry. When I *think* what will happen if anyone ever gets wind of it, I *shudder*. But I plan to employ my brain, not my body. And, with Gus's help, I've found myself a more fitting job.''

''What?''

''You'll be disappointed. It's not as sexy as dancing.'' And she explained.

''You recall what the biggest transport problem on Qish is? Not distance, but *height*, because of energy conservation through syntei.''

''How could I forget? I pointed it out to you in the first place. And I still carry the bruises from that trek up the White Ramparts.''

''Good. Now, while you were trekking lovestruck up the Ramparts, I was thinking. There's an underground river that causes the Spouting Mere. The cavern through which the river flows will be fairly evenly sloped, and quite large. A good deal larger than that zigzag path up the Rampart face. A nice, broad, sloping tunnel would be much better.

''Which leaves the small task of diverting the river.''

Marco groaned and slapped his forehead. ''By stealing a trick from the waterflowers!''

''Precisely.''

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"I can't think why the natives didn't hit on it."

"Because, as you keep saying in your little lectures to me, they don't expect to *build* technology—they expect it to grow on trees. If there was a single synte wide enough, they'd have done it ages ago, but there isn't. It will take some kind of barricade with syntei embedded in it. What's more, they're not mentally geared up. Nine tenths of the problem is realizing that there *is* one. No, this is a good old-fashioned R&D project. Not Qishite thought-patterns at all.

"When I thought of the idea I couldn't see how to get anyone interested. But Gus has contacts in Samdal who can pull strings, and to cut a long story short, they've agreed to set up the project."

"Great! And they pay you a fee for the idea!"

"Almost." Elzabet preened herself. "I'm Chief Engineer."

"But . . . Elza!" wailed Marco, stricken to his beloved professional core. "*I'm* the engineer!"

"Yes, but *you* are an expectant father and as such can't take on any strenuous tasks."

"But—"

"I thought you were in favor of female emancipation?"

"Yes, but—"

"Don't like the bootee on the other tootsie?"

"That's not the point! There's no reason I can't help! It's not as if *I'm* the one who's pregnant!"

Elzabet gave a mirthless laugh. "Er—Marco, there's something that you ought to know. About Samdali customs. Gus explained to me that—" She broke off as Four-way Polo and Lomyrla stepped through the koriel into the room.

"All set, Marco?" asked Polo jovially, clapping him on the back.

"You bet." *May as well sound enthusiastic. Lomy looks happy enough at the prospect—whatever it is.*

"I remember Lomyrla when she was a baby," said Polo. "My brother's child, but he was killed by a rogue 'vore before the synting, and I took his place. Didn't half kick! Seven and a quarter *punce* she weighed, at birth. I've still got the stretch-marks to prove it." His eyes glazed momentarily at the fond memory. Returning to reality, he saw Marco's expression.

"Bianchi, you look like you've swallowed a wozzet. What's ailing you"

"I think, on due reflection, that you'd better explain to me the elementary facts about childbearing," said Marco. Polo looked shocked. "I had a rather sheltered upbringing," said Marco lamely.

Polo stiffened, then made up his mind. "Ladies!" he commanded. "Out! This is men's talk!"

Marco now knew why the father-to-be was not permitted in public during daylight. Though it still seemed oddly prudish. He patted his stomach with a frown. Did he detect a slight swelling? He . . .

"Don't be silly, Marco. It won't show for months."

"Oh, hello Elza. I was thinking we could call him Marco Polo."

"He might be a girl."

"Never."

"How can you tell?" asked Elza.

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"The genescanner went up in smoke along with *Valkyrie*."

"A father knows these things."

"You pinhead. Not only do you get yourself seduced by a circus-girl, but you get yourself knocked-up into the bargain! It gives a whole new meaning to the word 'transplant.' Lomyrla's uterus synted to your abdominal cavity! That's *real* body-division! And to think I said that I saw no signs of female equality in Samdal!

"You didn't," said Marco. "They keep pregnant males in purdah." *Which is double the pity. The sight of a few males with bulging bellies might have caused me to ask the right questions earlier.* "I suppose," he said, "that Samdali society must be a kind of devolved matriarchy. Early on the men were forced to do it, then as time went on they got brainwashed into accepting it as the natural order, so that even now, with the sexual power-balance roughly equal, they see nothing to object to in the practice."

"Why should they, Marco? It *is* entirely natural! You said yourself that the father should help bear some of the burden."

"I suppose so," said Marco. "And I will," said Marco. "But I wasn't planning to be so literal about it."■

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By Tom Easton

The Forever Man, Gordon R. Dickson, Ace, 375 pp., $16.95.
The Falling Woman, Pat Murphy, TOR, $14.95, 287 pp.
Soldier of the Mist, Gene Wolfe, TOR, $15.95, 335 pp.
Foundation and Earth, Isaac Asimov, Doubleday, $16.95, 356 pp.
Into the Sea of Stars, William R. Forstchen, Ballantine/Del Rey, $2.95, 231 pp.
The Work of George Zebrowski: An Annotated Bibliography & Guide, Jeffrey M. Elliot and R. Reginald, Borgo Press (P.O. Box 2845, San Bernardino, CA 92406), $?, 54 pp.
The Monadic Universe, 2nd ed., George Zebrowski, Ace, $2.95, 167 + xxii pp.
Strange Maine, Charles G. Waugh, Martin H. Greenberg, and Frank D. McSherry, Jr., eds., Lance Tapley, Publisher (P. O. Box 2439, Augusta, ME 04330), $9.95, 295 pp.
The Face on Mars: Evidence for a Lost Civilization? Randolfo Rafael Pozos, Chicago Review Press, $12.95, 155 pp.
Dimensions of Science Fiction, William Sims Bainbridge, Harvard University Press, 278 pp., $20.00.

Jim Wander is an ace fighter pilot on the frontier between the realms of humans and the Laagi, the implacable aliens who destroyed on sight the first Terran ship they ever saw and have ever since refused to make peace, even temporarily enough to talk. And then one day, Terran probes spot an antique ship, relic of an ancient battle, heading home through Laagi space, and apparently still bearing a living pilot well over a century old. Wander is mustered, together with geriatrics specialist Mary Gallegher, to go get it and the secret of immortality it may contain.

So begins Gordon Dickson's latest, **The Forever Man**, with a promise of grand derring-do. The promise soon collapses, but only in exchange for greater marvels. That antique ship, *La Chasse Gallerie*, is empty. But its pilot is there nonetheless, soaked somehow into the

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very fabric of the ship and propelling it by the power of will alone. Once it is back on Earth, the experts study it and learn how, maybe, to make another pilot transfer his mind into his ship.

Poor Jim Wander. The key is psychological torture. Worse yet, once he has moved his mind into his ship, Mary Gallegher moves into his mind. And while they voyage into Laagi space, let themselves be captured, and study the Laagi mind—ultimate workaholics and order-takers—he finds her a tough-as-nails lady who is very hard to live with, especially so intimately. She is in his mind and completely dependent on him, but she is armed with several post-hypnotic commands that put his short hairs firmly in her grasp. She is also highly resentful of her dependency, and Jim suffers. The whole scene makes me suspect Dickson of some very cynical views of marriage.

Needless to say, the mission is a grand success. Jim and Mary return with new alien allies, new worlds to settle, a new way to navigate across the galaxy, and an answer to the war. Unfortunately, the navigational miracle is necessary only because the humans are peculiarly dumb in that respect. Even more unfortunately, the reader's involvement in the story dies about the time Jim and Mary start their tedious study of the Laagi workaholics.

Dickson had a satiric point to make, along the lines of "All work and no play make Jack a dull boy," especially considering the nature of the aliens who can tell the Laagi to stop, but he beat it so hard that he killed it. He might have done better to put more stress on the relationship between Jim and Mary. Workaholism comes in here, too, but the main issue is that of dependency versus control, and it could have been developed much more fully and satisfyingly. Certainly, Dickson could have resolved the issue in a much less clumsy way—as he handled it, the instant transition from loggerheads to clinch-and-fade was virtually incomprehensible.

Pat Murphy's **The Falling Woman** is a lovely tale, well told and well peopled. The background is simple: Years before the story, when Liz Butler was a young mother, married to a doctor, she wigged out. She loved her baby, Diane, but she wanted more than housewifery. She ran away to study anthropology, and when hubby dragged her home, she slashed her wrists. He then committed her to an asylum. She got out when she learned to act sane and agreed to a divorce on his terms, leaving him with custody of Diane and control over her visits to her daughter. Now she is a professional anthropologist, respected by her colleagues and famous for her books, which bring the past to life with unusual effectiveness.

Is she sane? She isn't sure, for she sees things. When she walks down the street, shadows of long-gone peoples go through the motions of their lives around her. She can hear them, sometimes understanding what they once said to each other, and she can even watch as they hide treasures. Is she sane? She has a reputation for luck, for where she digs, she finds. She has a wild talent, but she doesn't trust it, though she is used to it and knows how to feign normality for the living.

And then, on a dig in the Yucatan, a shadow speaks *to* her. This is a first, and Liz feels madder than ever. Yet the shadow is not a shadow, but a ghost, a long-dead Mayan priestess who realizes that Liz can see her. She reveals her own sacrifice to the gods, her curse upon her people, her suicide. She indicates that the cycles of time are turn-

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ing, and that with a suitable sacrifice, the old gods may waken once more.

Fleeing from the death of her father and the failure of a love affair, daughter Diane arrives unexpectedly at the dig. She yearns for the mother she lost so young, but her mother is brusque, unused to love—incapable of love—unable to give Diane what she needs. They circle each other like two strange dogs while Liz's colleagues, particularly an old friend and would-be love, watch in dismay.

Working on the dig, Diane heals as Liz learns the priestess' secrets, including the location of her tomb. Mother and daughter begin to grow closer, though both are shy. And then the tomb is opened, to reveal the ghost's bones and a jar containing the bones of an infant. Liz learns that the priestess, before her suicide, had sought to strengthen the gods with the blood of her child, and that she expects Liz to . . .

Here is the stuff of a potent denouement, and Murphy does not avoid the potential, despite the risk of hokey melodrama. *Falling Woman* ends on a note of high drama, but the resolution is restrained, realistic, and quite satisfying. Recommended.

Gene Wolfe is an astonishingly versatile fellow. After *The Book of the New Sun*, we might have expected him to continue in that far-future operatic vein. Instead, he moved toward the prosaic present with *Free Live Free*. Now he continues backward in time, stopping in the age of ancient Greece, when the gods were real and kings waged bloody war with bronze swords. And **Soldier of the Mist** is but volume one of a new series.

The premise is that one Latro, a soldier with the forces of the Great King out of the Middle East (apparently Persia), has suffered a head wound that leaves him unable to remember more than one day at a time. He is a barbarian, but he is also literate, and his solution is to record each day's events—when he remembers!—on scrolls. In due time, the scrolls came into Wolfe's possession, and he has translated them. *Soldier* is the first of several.

The tale begins soon after the head wound, when a healer suggests using the scrolls. We see Latro's initial confusion and acceptance and grow accustomed to his habit of translating the names of places and peoples into his own tongue, which Wolfe has then faithfully translated into ours (Athens is "Thought"; Spartans are "Rope-Makers"), as well as to the essential lack of continuity in his life and his tale. We learn that he alone can see the gods when they walk on Earth, as well as vampires and other creatures of the supernatural realm, although if he touches them, others can see them too (perhaps a metaphor for the writer's role). We follow as priests see in him the hands of the gods, take him to a sibyl who prophesies his destiny, and send him off, with a girl slave and the poet Pindar, to seek his cure in a distant temple. Then comes adventure—capture by the Rope-Makers's slaves, imprisonment, transfer to the possession of an Athenian leather-merchant in charge of a warship, a term as a slave in an Athenian brothel, release by Rope-Maker troops, and a mission to aid the fall of a besieged city. Along the way, he meets gods, goddesses, necromancers, and night demons, acquires friends, and loses them as he forgets, and dimly scents an awkward niche in divine affairs.

The most surprising thing about the book is the very continuity whose lack we at first bemoan. A man can, says Wolfe, have a memory as adequate as

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any if he but notes the high points of his days upon a scroll and has the occasional prompt from his friends. Life goes on, a stream that sweeps him with it willy-nilly, and his own recollections matter relatively little.

Wolfe is the envy of most other writers. His command of language and story is unrivaled, and he alone has the temerity to tell a tale in the eternal present, as Latro's viewpoint must see it. It's a daring device, and one that must fail in many another writer's hand. But in it Wolfe finds a way to keep a story fresh for all its length—to Latro, everything is new, always, and so it is to the reader. In tales told in a more conventional way, staleness inevitably creeps in.

Join me in looking forward to the next volumes in the series. Wolfe is letting Latro's memory very gradually recover, and he may find it harder to maintain that freshness. But if anyone can do it, he can.

Twenty thousand years is half the time between now and the first modern humans, the Cro-Magnons. It is twice the span of urban civilization. It is also, says Isaac Asimov, the time between now and the era of the First and Second Foundations, whose task it is to shorten the dark age between Galactic Empires. And his tales of that era have proven immensely popular. First there was *The Foundation Trilogy*. Then, in response to popular demand, came *Foundation's Edge* and the extensions of his robot novels that forged a link across the millennia. Now he gives us **Foundation and Earth** to complete the chain and round out his vision of humanity's future and its ultimate destiny of harmonious unity.

Foundation and Earth is a neat tale, deftly knitting together the threads of the other books. At the end of *Edge*, Golan Trevize, Councilman of the First Foundation on Terminus, had just approved the expansion of the world-organism Gaia to become a galactic organism, Galaxia. As *Earth* opens, he is consumed by doubts of the rightness of his decision, and he resolves to search out Earth, his original mission. Accompanied once more by primeval historian Janov Pelorat and by Janov's Gaian mate, Bliss, he sets out, visiting first the world that once was Baley's World, where, from a fragment of the log of the ship that figured in *Robots and Empire*, he acquires the coordinates of three uncharted worlds. He finds the first, Aurora, empty. The second is Solaria, and it offers both a *reductio ad absurdum* of human isolation and a child who, though annoying to Trevize, will become important. The third is Melpomenia, where he finds the final clue to Earth's location.

If I say much more, I run the risk of saying too much. Sadly, for all its length, *Foundation and Earth* is a thin tale, the journal of a brief quest tediously padded with endless argument and reflection on what it all means. Not much happens, though Trevize does get laid twice (with help from an unexpected source). What's worse, what does happen is fairly predictable to anyone who has read the earlier books. The book is largely a finishing touch, a summary, a last look back over an admittedly monumental creation. If it had to stand alone, it would fail to satisfy. Fortunately, it does not stand alone, and countless Foundation fans will be delighted with it.

Will there be any more Foundation books? Asimov is not saying, to my knowledge, but there is a suspicious socket on the top of his capstone. He ends with the prospect of unification of humans with each other, with nature,

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and with robots, and the thought that, though the galaxy contains no nonhuman intelligences, there may be aliens in other galaxies, and they could arrive any day. He thus may have in mind a new cycle of novels, in which Galaxia—probably still incomplete, in order to supply individual heroes—must cope with invasion. And I, for one, will be delighted to see the Master start something fresh. It will still be talky, for that is Asimov's style, but it should have the novelty and excitement of which he is capable at his best.

Bill Forstchen has been watching too many TV sit-coms. With the *Ice Prophet* trilogy, he demonstrated that he could handle high drama. With **Into the Sea of Stars**, it's low comedy, albeit with serious touches.

The premise is that in the next century, population pressure will spark the nuclear Armageddon, but there will by then be several hundred space habitats, occupied by researchers, idealists, ethnic groups, and political exiles. As *der Tag* approaches, they will equip themselves with all manner of sub-light drives and leave the solar system. After *der Tag*, technological civilization will be a millennium in rebuilding, and by the story's time it will be a fair replica of what we have today, even unto the vicissitudes of university profs who must pass ozone-head athletes and kowtow to petty, vicious administrators.

One such prof is historian Ian Lacklin, a pudgy nebbish whose gangly, acned graduate assistant (or "grad-ass"), Shelley, has an inexplicable yen for him, and she has put through a grant application in his name, proposing to take a rickety surplus FTL ship and go in search of the lost colonies. When the grant comes through, Lacklin's tyrannical Chancellor seizes the opportunity

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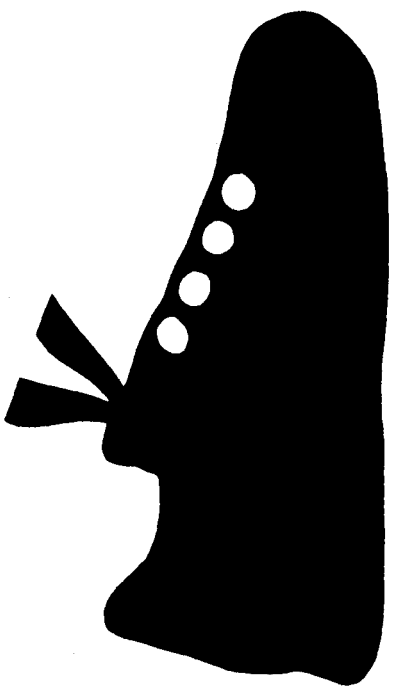

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to get rid of political opponents by sending with Lacklin and Shelley an alcoholic physician and a form-happy psychologist/sociologist. Incompetents all, bickering and back-stabbing while their ship threatens to fall apart. Not quite "The Three Stooges in Space," but close, my dear, close.

And they are off, to see what has become of the researchers who had once sought immortality, the feminists who abjured all involvement with men, the meditators, the Albanians and Serbo-Croatians, and Franklin Smith's political exiles. This last group, more than any other, has thrived, and now it stands ready to take revenge on the world that had cast out its founders.

Unfortunately, Forstchen cannot let the feeble yucks fade out entirely as his tale grows more serious. Lacklin and his colleagues learn to get along with each other, and when they face disaster, they can rise to meet it. But the final confrontation is absurdly fumble-fingered. And it does not help when Shelley finally emerges from her strange passivity. When Forstchen finally gives her stage-front, it is only to have her act so out of character that the reader is forced to reconsider her true identity. I suggest that she is really an exile returned in secret to maneuver Lacklin and Earth into a more dynamic future. If so, she knows her stuff, but I wish Forstchen had given her as much characterization and as great a role in the story as he gave the others.

George Zebrowski is gaining some gratifying recognition. His body of work is not enormous, and his recent novels have been largely for young adults, but he is, say Jeffrey Elliot and R. Reginald in **The Work of George Zebrowski: An Annotated Bibliography and Guide**, "a compleat science fiction professional." The quality of his work is generally high, although "Critical response . . . is vehemently divided, often vicious and blind, but Zebrowski takes Oscar Wilde's view that when the critics are divided, the writer should be at peace with himself."

The *Bibliography* lists novels, short stories, articles, speeches, juvenilia, honors, and translations (of and by), and it includes a brief biographical sketch. It should be of interest to collectors, scholars, and Zebrowski fans.

The Monadic Universe should be of more interest to the general reader, for it is a collection of Zebrowski's short fiction from the 1970s, and it may explain why the critics are so divided: Zebrowski is a clever, cerebral writer (he studied philosophy in college) with, at times, a very bleak outlook. He tends to see people as essentially isolated within their individual skulls and their great mission as conquering that isolation. Yet they fail, as in "The History Machine," whose hero looks at himself looking at himself . . . in a time viewer, or "The Word Sweep," where words, once spoken, crystallize from the air to inundate civilization, or the title story, which might have been titled "How to Be Happy with Solipsism."

Lance Tapley is a one-time investigative journalist who decided to become a publisher. He therefore set up the small outfit bearing his name to release one or two books a year. So far, the books have been of strictly regional interest, but now he is broadening his reach with **Strange Maine**, an anthology of fantasy and SF—mostly fantasy—stories set in Maine, several of them by writers who have lived in the state. Assembled by Charles Waugh, Martin Greenberg, and Frank Mc-

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Sherry, it was released for Halloween, 1986, but it is still available.

And it's worth ordering, for the editors have unearthed some unlikely antiques, including at least two you have surely never seen before. There are the obvious writers within the book's pages—Stephen King, with "One for the Road," short cousin to *Salem's Lot*; Edgar Pangborn (a Maine farmer, of all things, from 1939 to 1942), with "Longtooth"; and Ruth Sawyer, with the evocative "Four Dreams of Gram Sawyer." There are also Fredric Brown ("Death Is a White Rabbit"), Fritz Leiber (the surprisingly modern "Yesterday House"), Charlotte Armstrong (the too-long "Three-Day Magic"), Jane Yolen (the delightful "One Old Man, with Seals"), Richard Matheson (the gruesome "The Children of Noah"), and Seabury Quinn ("The Phantom Farmhouse"). Less obvious, because less famous, are Don Wismer, with "Safe Harbor," Carlos Baker, with "The Prevaricator," and myself, with "Mood Wendigo." The unknown antiques, which *do* deserve your attention despite their grey hairs, are Harriet Prescott Spofford's "Circumstance" (1860), the tale of a woman who conquered a dragon-like Indian Devil with song (supposedly based on an incident in the life of the author's maternal grandmother), and Edward Page Mitchell's wry tall tale, "The Last Cruise of the *Judas Iscariot*" (1882).

A few months ago, Dick Hoagland had an article here about the Face on Mars and its astonishing alignments with the summer solstice of 500,000 years ago and with local landforms that may be the ruins of ancient construction projects. The Face had shown up in Viking orbiter photos and been dismissed, initially, as a trick of lighting and shadow. Later, a few people changed their minds, Hoagland learned of their efforts to "prove" the Face was constructed by intelligent Martians, and he became an enthusiast himself. He then organized the "Independent Mars Investigation Team," which sought more photos, measured alignments, and discussed interpretations via a computer bulletin board run and donated by the InfoMedia Corporation. One member of the team was Randolfo Pozos, a cultural anthropologist specializing "in the planning and development of innovative health and human service programs." In due time, Pozos assembled the proceedings of the bulletin board conference and his own comments into **The Face of Mars**.

Pozos is not as sanguine as Hoagland. He waffles, but he seems to think the Face says more about the human propensity for wishful thinking than about ancient Martians. Still, the photos and discussion he presents come close to being convincing. The ruins *almost* look real, and the alignments actually do make some sense. However, a planet-wide jumble of rocks and craters is bound to contain a few intriguing, if chance, alignments, and people *do* project themselves into random patterns and artifacts of image processing.

Is there anything there, really? I, for one, don't think so. But I do agree that the images are provoking, and that there is only one way to be sure: Go see. Even a low probability of an extinct Martian civilization deserves checking out, just on the off chance, and it is one more reason to return to Mars.

And just think: Here is this humongous humanoid face aimed to the sky, perhaps built as Mars was becoming unable to support life. Did the Martians erect it as a cry for help from an Earth they prayed could notice? Or was it an

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emblem toward which they could look back after their flight to Earth to become the Neanderthals, our ancestors? Are we all Martians? (What a headline for the tabloids!)

In 1978, at Iguanacon, William Sims Bainbridge passed out questionnaires to the fans. Adding the results to surveys of fanzine editors and others, he collected a great deal of information about how the readers of SF see the writers. With factor analyses and correlation statistics, he then was able to identify what the writers write, according to their readers. He read the SF himself, of course, but his aim was not to analyze the field solely according to his own insights. He sought the objectivity of statistics to construct an ethnography of SF, and it is remarkable how thoroughly this objectivity meshes with the more subjective opinions—which we are prone to call "objective reality"—of individual observers of SF such as myself. His book, **Dimensions of Science Fiction**, thus becomes something of a testimonial to the power of the opinion survey so beloved of social scientists and may go some distance toward convincing the physical scientists and engineers—and *Analog* readers—that the social sciences are not entirely soft-headed mush.

I suspect that if someone were to develop a method to classify the fiction itself in terms of concepts, weaponry, language, or . . , using the techniques of the hard sciences toward the same end, they would find considerable agreement between their results and those of Bainbridge's sociological, ethnographic approach, even though the latter is essentially unreproducible. (Or has this already been done? If so, I haven't heard of it.)

Bainbridge finds three main sectors of SF. First, there is hard science SF, which emphasizes gadgetry, quantitative thought, and rationality and proselytizes for the human mastery of the universe. Second, there is the more emotive, pessimistic "new wave." Third, there is the "fantasy cluster," which, despairing of mastery, escapes into the realm of pure imagination, of art for art's sake. Horror and weird fiction bridges the gap between fantasy and the new wave, while sword-and-sorcery, via action-adventure, links fantasy to classic and hard science SF.

What is the function of SF? Bainbridge finds the record poor on its predictive ability but sees it as fostering a flexible mental outlook, a resistance to dogma, and calls the SF community, across all the sectors, an intellectual subculture of free-thinkers. It is willing to consider alternatives, and it is not terribly religious.

To my mind, Bainbridge paints an attractive portrait of the community (I realize that some groups find free-thinkers threatening). The problem, as he himself recognizes, is that the portrait is based largely on 1978 data and is thus at least a little out of date. Too, it suffers from the problem of statistics—they are "noisy," as when they let him call Van Vogt a hard science writer or link Cherryh to sword-and-sorcery. I find Van Vogt much more a space opera man. Cherryh, I think of alternately as hard-science and new wave, but our disagreement is partly a reflection of the data's datedness; her early work *was* s&s.

I recommend the book. It is fascinating both for its methodology and for what it says about us and our field. ■

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brass tacks

Dear Dr. Schmidt,

Tom Easton comments in the Reference Library of the September 1986 issue of *Analog* that, "They [the politicians] ignore the evidence—federal money spent in ways that produce jobs does more good for society as a whole than food stamps, AFDC, etc. (might we then say the Challenger explosion is a social good? After all, we'll have to build a replacement—won't we?—and that will mean jobs)—but that's par for the course." Furthermore, he states, "We may even, one day, say it [the Challenger tragedy] was all for the best."

Mr. Easton, I disagree with everything that you propound in these statements. It is clear from your writings, here, that your fundamental concern is with the future collective fate of society, and not with man qua living, breathing, sovereign beings.

You are correct that new jobs will be created by this disaster; some of those jobs include designing and building new ships, as well as writing news reports and magazine stories about the accident and its aftermath. However, the real effect is not a creation of new jobs, but a diversion of energies toward other activities. Now, engineers are not working on other projects that were contingent on a successful mission writers such as yourself, are not now concerned with other aspects of space flight and exploration. To drive the point home: Is an AIDS epidemic a social good because it creates jobs for molecular biologists, epidemiologists, and thousands of other medical personnel? The Challenger explosion sent shock waves that rocked and distorted many people's future actions.

The notion that "things will work out in the end" is one which ignores the means to the end; and, in this case, un-

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fortunately, the means to an end were men and women who perished. The seven crew members were all ends in themselves and deserve more than consideration as only social or historical ballast. I suspect that if each of the crew had been asked what effect a shuttle explosion would have on their lives and worlds, none of them would have responded, "It's all for the best."

"Mr. Easton, was World War II all for the best?" Would a catastrophic earthquake in southern California be "all for the best"?

Would it be "all for the best" if *Analog* ceased publication?

To answer the above questions one must first identify whose interests are involved, i.e., the best for whom? must be answered. In all cases, there are victims of one sort or another, and there are indirect effects, as well as consequences in the distant future; and, in all cases, the future that we now envision is lost. In all cases there will be a future that consists of the lives and activities of the survivors; and, in all cases, the effects on the victims and their world can be forgotten, for the victims are no longer active parties with any stake in the matter and may not be consulted. It is only the world of the survivors that can turn out for the best.

The Challenger tragedy is a tragedy because those who had invested their lives in their work lost their lives or their work and the personal enjoyment, pride and sense of accomplishment that was to be theirs. It is a highly personal tragedy, and no matter how it is twisted, it can't be a social good.

JOHN C. ROBBINS
University of Minnesota
Minneapolis, MN 55455

Mr. Easton replies. . . .

I agree completely that the Challenger *explosion was a tragedy that should never have happened. But it did happen, and it is our obligation as the survivors to make sure that the ultimate effect is indeed for the best. We must learn from the disaster and reaffirm our ambitions for space.*

Yes, I am more concerned with the destiny of our species than with that of individuals. That is a hallmark of SF, and you should not be surprised to find it in these pages. Nor should you be surprised to find provocative rhetorical (and not-so-rhetorical) questions. "It was all for the best" is a judgment for history to make, and one which may indeed apply to World War II because of that holocaust's effect on social, technological, and economic progress.

Dear Dr.Schmidt:

I was struck by your recent editorial on "Trick Questions." As a psychiatrist I still consider myself a scientist, even if I do deal in a field that is plagued with more theories than hard data. I do know of similar questions that arise, and perhaps appreciate the value of viewpoint more than a physicist.

It is not at all uncommon for people to seek a psychiatrist to help them solve what they see as a problem, when in fact they are asking the wrong questions. I saw a teenage girl with urinary retention. She was resentful of seeing me for what was obviously something that needed surgical attention. I didn't try to even begin to explain the stresses that I felt were part of her life due to her sexual feelings for her father. I just told him that I thought she should be involved with more activities with other kids her age. He complied, and her retention went away, without her ever understanding why. I also saw a school teacher with obsessive-compulsive disorder. He was convinced that he was this way because he could not tolerate an unstructured job setting, since his mother had belittled him for not being neat. I felt like he needed anti-obsessive drugs. He took them, got well, and still

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thinks that his problems are over because he "understands" them, when he really has no concept of his medication needs.

I am also reminded of the to-our-eyes bizarre way Europe was divided in the Middle Ages, with who was King and which Church was supreme controlling boundaries more than Oceans or Race or Language.

Perhaps we really don't see the Big Questions from the right viewpoint.

JAMES F. HOOPER, M.D.
Tuscaloosa, AL

Dear Stan:

I know that this comment is a bit late, but the discussions about radiation in space as an answer to the Fermi paradox have finally overcome my taciturnity.

What I want to point out is that there are very reasonable, simple ways we'll ultimately be able to solve the radiation problem. Any other species wanting to go into space will ultimately do the same. That is, modify our own cells so that we can repair the effects of radiation in an ongoing way.

This isn't at all out of the question. There are bacteria which live happily in nuclear reactors right now. We already have mechanisms for DNA repair and repair of all the other kinds of damage. We're coming close to being able to change our own genome (in *adults*, not unborn children). It's being worked on right now. The fact that neurons may be involved isn't a barrier, either. Neurons have been seen dividing in adult rats and monkeys already. If we can change our genome we can certainly change the repair rate of our neurons too.

Ongoing repair of radiation damage will certainly mean that astronauts would have to eat more and expend more energy in basal metabolism than people living on Earth. But that's not a big objection.

Practically speaking, it will take time. Cure of thalassemia (an inborn blood disease which may be a candidate for this kind of therapy) involves changing only one gene. Cure of Lesch-Nyhan syndrome (an inborn fault leading to idiocy and compulsive self-mutilation) involves only one gene and may happen even sooner. Radiation repair involves implanting a complex system of several genes, with feedback control. That's not simple. But in science fiction terms the step from cures for thalessemia to modifications to protect against radiation is immediate.

What this would mean, of course, is that everyone who went to space would take a *vaccine against radiation*. They won't look different, but they'll be changed. The space stations and spaceships we live in will have *NO RADIATION SHIELDING AT ALL*.

We'll still be susceptible to radiation, of course. It's just that the dose required to swamp our protective systems can be orders of magnitude greater than that for people now. Perhaps nuclear reactors will have *SOME* shielding; but even that will be less than now. This would have lots of consequences for the bulk and mass of both power stations and ships too.

I feel radiation should be seen as ultimately a problem of biology rather than physics.

THOMAS DONALDSON

Dear Mr. Schmidt:

I am writing with respect to two problems I have with your October 1986 issue of *Analog*. The major issue concerns your response to the letter from Raymond Graudis: you talked about people who don't have "umlauts" on their typewriters. Of course not—I doubt that anyone does. For you confused umlaut with the diacritical mark of two horizontal dots over a vowel. Umlaut is a linguistic term to describe a shift in the

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pronunciation of certain (mainly) Germanic vowels over time. The diacritical mark is sometimes termed "diaresis," but this is also a linguistic term to denote the situation where the second of two successive vowels is not silent or diphthongal but has an independent pronunciation, e.g., Boötes. Now, you may find some dictionaries, as a secondary usage, will have umlaut as a description of the two dots themselves over German vowels—an unnecessary reduction in the specificity of our words. Besides which, if I have an umlaut key, will I also need a diaresis key to spell Boötes?

ALLEN MEYER

4230 E. Mountain View

Phoenix, AZ 85028

What a relief that that's your major *issue (and I'm sorry we didn't have room for the rest of your letter)! Unfortunately, I can't agree that your concern is either major or right. You* are *right about the primary meaning of umlaut, of course, but the secondary meaning as the diaresis representing it in written German is well established and recognized by every English dictionary (and every German instructor) I've checked with. You may consider this "an unnecessary reduction in the specificity of our words," but you're much too late. I'm afraid I'll have to accept their authority over yours.*

Dear Mr. Schmidt:

I am very grateful for Tom Easton's generous review of *God Game* in the December 1986 issue of *Analog*.

However, I would like to try to persuade all science fiction reviewers and editors that I have never been a member of the Chicago City Council.

This is the second time that such phenomenon has been reported. Both reviewers apparently confuse me with Father Frank Lawlor who at one time was a member of the City Council but was forced out of the Council by Cardinal John Cody. Father Lawlor is an Augustinian, a Republican, and a sometime crusader for decent dress. I am a Diocesan priest, a Democrat, and a Professor of Sociology.

I do not think anyone would be sent to hell for being a member of the Chicago City Council but might be considered in some quarters a prima facie case for a long, long time in purgatory.

ANDREW M. GREELEY

Chicago, IL

Dear Dr. Schmidt:

I've just read "Trick Question" (October—I'm catching up), and I enjoyed it. You raise some good points, but you do not mention something of psychological significance, something I call "Intellectual heresy #1."

As you say, the key to the solution of a trick question is in the way you approach it. But the essence of the problem is that we seem to *want* to find a complex solution to every problem. I think it is in the nature of the intellectual, either genetically or as an article of faith. I trace its modern history back to H. L. Mencken: "For every complex problem there is a solution which is straightforward, simple, and wrong." This is a quotation which is frequently heard when someone suggests a straightforward approach to a thorny problem.

The logic of Mencken's statement is that given a complex problem, you can always find a solution which is straightforward and simple but which is not a real solution because it is wrong. The way the quotation is used, it has the sense that any (i.e. every) straightforward and simple proposal to a complex problem must be wrong. Not only is this a perversion of the Mencken statement, it is untenable, as you show. (I realize that Mencken might have been

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speaking ironically and might actually have meant it the way it is quoted; not having access to the context, however, I cannot tell.)

For me the crucial question is what psychological quirk makes such a stance so widespread? Though it is a different discussion, I have the feeling that it is related to the problem David Brin detailed in the "Dogma of Otherness." That is, the obvious conclusion which can be drawn from his data must be wrong. For another example, consider what a particle physicist said on TV about Kaluza-Klein: "Sure it's elegant (= simple and straightforward). But just because it's elegant doesn't make it right." This as justification of his involvement in the non-empirical proton decay project.

And so it goes. Keep up the good work.

WILLIAM J. SULLIVAN

Gainesville, FL ■

SFOHA NAMES WILLIAMSON LIBRARY AS REGIONAL REPOSITORY

The Science Fiction Oral History Association (SFOHA) has recently named the Jack Williamson Science Fiction Library as a regional repository for its oral history archives. During the past decade, SFOHA has been actively involved in recording hundreds of interviews with science fiction writers, editors, fans and scholars, as well as in taping convention sessions and other programs. Cassette copies of the SFOHA tapes have been placed in the Williamson Library at Eastern New Mexico University in Portales, available to interested persons according to fair use copyright guidelines.

Besides the SFOHA oral history archives, the Williamson Library offers other resources such as 9,000 published novels and anthologies, backed up by some 10,000 single issues of pulp magazines, slicks, and fanzines, many extending back into the "golden age" of science fiction and earlier. It has extensive private papers of several pioneer writers in the genre, plus 20 years of copy-edited manuscript files from *Analog* and some years of administrative files from the Science Fiction Writers of America (SFWA). SFWA has also designated the Williamson Library as a regional repository for review copies of hardback publications.

The Williamson Library is open 8:00-5:00, Monday through Friday. Additional hours and interlibrary loans may be arranged in advance. Jack Williamson, who is himself one of the "golden age" pioneers and still actively writing, keeps office hours in the Library by appointment. For more information, contact Mary Jo Walker, Special Collections Librarian, Eastern New Mexico University, Portales, NM 88130 (phone 505-562-2636).

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a calendar of analog upcoming events

8-10 May
VALLEYCON 1 (Ontario SF conference) at Cornwall, Ontario. Guest of Honour—Poul Anderson, Art Guest of Honour—Guy Flechette, Gaming Guest of Honour—Gary Gygax. Registrtion C$15 until 31 March, C$20 at the door (certified check or M.O.). Info: Valleycon 1, Box 1576, Cornwall ON Canada K6H 5V6

15-17 May
KUBLA QUINZE (Nashville SF conference) at Sheraton Downtown, Nashville, Tenn. Guest of Honor—Martin Caidin, Artist Guest of Honor—Ron Walotsky, Fan Guests of Honor—Bruce and Elayne Pelz, MC —Andrew J. Offutt. Registration—$17 until 1 May, $20 thereafter (children under 12 half-price). Info: Ken Moore, 647 Devon Drive, Nashville TN 37220. (615) 832-8402.

15-17 May
KEYCON '87 (Manitoba SF conference) at Delta Inn, Winnipeg, Manitoba. Guest of Honour—Keith Laumer, Artist Guest of Honour—Ken Macklin, Fan Guest of Honour—Mike Glicksohn, Special Guest—Barry Longyear. Registration—$18 until 26 April, $24 at the door. Info: Keycon '87, Box 3178, Winnipeg MB CANADA R3C 4E6.

15-17 May
CONQUEST 18 (Missouri SF conference) at Kansas City, Mo. Guest of Honor—John Varley, Fan Guest of Honor—Brian Thomsen, TM—Rusty Hevelin. Info: Conquest 18, Box 36212, Kansas City MO 64111.

22-25 May
DISCLAVE 31 (DC-area SF conference) at Sheraton Hotel Washington, New Carrollton, Md. Guest of Honor—Gene Wolfe, Artist Guest of Honor—Barclay Shaw. Registration—$15 until 1 May, $20 thereafter. Info: WSFA/Disclave '87, 65-C Ridge Road, Greenbelt MD 20770.

29-31 May
PHOENIXCON 2 (Southeast SF/media conference) at Lanier Plaza, Atlanta, Ga. Guest of Honor—Michael Kube-McDowell, Artist Guest of Honor—Dan Barry, Special Guest —Frederik Pohl. Registration—$15 in advance, $20 at the door. Info: The Science Fiction & Mystery Book Shop Ltd., 752-1/2 North Highland Avenue NE, Atlanta GA 30306. (404)875-7326.

27 August-2 September 1987
CONSPIRACY '87 (45th World Science Fiction Convention) at Metropole Hotel & Conference Centre, Brighton, U.K. Guests of Honour—Alfred Bester, Doris Lessing, Arkady and Boris Strugatsky; Fan Guests of Honour—Joyce and Ken Slater; Artist Guest of Honour—Jim Burn; Special Fan Guest—David Langford; TM—Brian Aldiss. Registration—Attending £25, $50, $A50; (given the exchange rates people joining from the U.S. should consider tendering payment in British or Australian money). Supporting £10, $15, $A20; This is the SF universe's annual get-together. Professionals and readers from all over the world will be in attendance. Talks, panels, films, fancy dress competition, the works. Join now and get to nominate and vote for the Hugo awards and the John W. Campbell Award for Best New Writer. Info: ConSpiracy '87, Box 43, Cambridge CB1 3JJ, England, U.K. or Bill & Mary Burns, 23 Kensington Court, Hempstead NY 11550 OR Justin Ackroyd, GPO Box 2708X, Melbourne, Vic. 3001 Australia.

—Anthony Lewis

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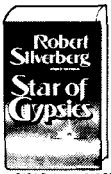

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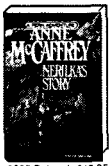

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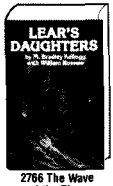

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